

## MEMO

To: File

From: Kathleen Miller

Date: 8/13/10

RE: Ford Motor (Romeo Engine Plant) EPA ID# MID 078 400 165

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### Summary of Phone Conversations:

On Friday August 13, 2010 I called the contact person, Gerald Yarema per RCRA Info. Mr. Yarema informed me that he's been there for over 10 years and his facility is only a generator (not a TSDF). I gave him some background regarding the PAVSI report prepared on 12/31/93 for this site and the RCRA database that received an update from the Ford Motor Company on 2/24/10 indicating that the facility is a TSD facility. He sounded confused and said he would call me back or email me with more information. I did receive another call from him today after he looked through his records. He stated that the Ford Motor Company closed down lagoons in 2003. He did confirm that at some point the Ford Motor Company managed hazardous waste. Lastly, he mentioned that his facility has been working with the state of Michigan since 1985. He forwarded me an email from Clay Spencer with State of Michigan DEQ regarding a deed restriction and a note stating that, "DEQ is fine with the deed restriction".

On August 31<sup>st</sup>, I attempted to contact Mr. Spencer with MDEQ via email. I received several emails from Mr. Spencer and others from MDEQ regarding this matter. The final email dated September 8<sup>th</sup> from Mr. Spencer stated that, "... the site has gone through closure which means the site cannot operate as a storage facility for greater than 90-day storage but does NOT mean the site had done corrective action." Mr. Spencer also pointed out that the 525 Deed Notice states, "... the site is subject to the corrective action requirements..." To Mr. Spencer's knowledge, no corrective action efforts have been made at the site.

I was informed by George Hamper, that if a company representative tells me that no corrective action efforts have been made by the facility, (in this case, **MDEQ stated that the facility is subject to corrective action requirements but corrective action measures have NOT been made**) this is a reason to determine a **CA070YE**- yes further investigation is necessary.

### Updated contact info for this facility:

Ford Motor Company (Romeo Engine Plt. 17)

701 E. 32 Mile Rd.

Romeo, MI 48065

Gerald Yarema, Facility Manager

Tel: 586-752-8425

[gyarema@ford.com](mailto:gyarema@ford.com)

Clay Spencer

MDEQ/DNRE

[spencerc@michigan.gov](mailto:spencerc@michigan.gov)





**RE: Ford Romeo Engine Plant**

**Spencer, Clay (DNRE) to:** Rokosz, Susan (S.M.), Tyson,  
Kimberly (DNRE)

09/08/2010 10:06 AM

**Cc:** "Dailey, Daniel (DNRE)", "Buda, Steve (DNRE)", KathleenA Miller

As Kimberly said the site has gone through closure-however that means the site cannot operate as a storage facility for greater than 90 day-storage, but does NOT mean the site has done corrective action. The fact that the site is subject to corrective action is a key part of the 525 deed notice.....(see the 2nd paragraph in the attached notice).....and to our knowledge no corrective action has been done at the site.

-----Original Message-----

From: Rokosz, Susan (S.M.) [mailto:srokosz@ford.com]  
Sent: Wednesday, September 08, 2010 10:52 AM  
To: Tyson, Kimberly (DNRE); Spencer, Clay (DNRE)  
Cc: Dailey, Daniel (DNRE); Buda, Steve (DNRE)  
Subject: RE: Ford Romeo Engine Plant

Good morning all,

Please see the attached closure certification. Is this sufficient?

Thank you.

Sue Rokosz

-----Original Message-----

From: Tyson, Kimberly (DNRE) [mailto:TYSONK@michigan.gov]  
Sent: Friday, September 03, 2010 7:35 AM  
To: Spencer, Clay (DNRE); Rokosz, Susan (S.M.)  
Cc: Dailey, Daniel (DNRE); Buda, Steve (DNRE)  
Subject: RE: Ford Romeo Engine Plant

\*RCRA closure of 2 SWMUs -  
but other units have not been  
addressed

According to the December 31, 1993 Final PA/VSI Report the 2 former surface impoundments and container storage area 1 underwent RCRA closure in 1985, and 1984 respectively. No certification letter was located at the time of the report.

The DNRE has not initiated corrective action for this site yet.

---

From: Spencer, Clay (DNRE)  
Sent: Thu 9/2/2010 3:06 PM  
To: Rokosz, Susan (S.M.)  
Cc: Dailey, Daniel (DNRE); Tyson, Kimberly (DNRE); Buda, Steve (DNRE)  
Subject: RE: Ford Romeo Engine Plant

My only involvement with this site is the 525 deed notice. EPA has also asked about this site. Kimberly Tyson is the person assigned to the site and I have cc'd her on this email. She will get back to you.

---

From: Rokosz, Susan (S.M.) [mailto:srokosz@ford.com]  
Sent: Thursday, September 02, 2010 12:23 PM  
To: Spencer, Clay (DNRE)  
Subject: RE: Ford Romeo Engine Plant

Hi Clay,

Does the attached letter, and the deed restriction we have, mean that we can consider the site RCRA-closed? I understand Michigan would still require us to call the site a TSD for the Biennial Report.

US EPA Region V has inquired as to whether the site is RCRA-closed.

Thanks,

Sue Rokosz  
313-322-3826

---

From: Spencer, Clay (DNRE) [mailto:SPENCERC@michigan.gov]  
Sent: Wednesday, August 25, 2010 3:04 PM  
To: Rokosz, Susan (S.M.)  
Subject: RE: Ford Romeo Engine Plant

Susan-from the people I have talked to as far as the Biennial Report-you still need to report as a TSD (whether closed or not).....attached is a letter regarding closure (actually regarding surface impoundments).....stating that they only handled non-haz waste.....but a drum storage area which was closed in 1985 (by EPA)-still leaves the facility as a TSD for corrective action purposes.....(referenced in the attached as HSWA-which required corrective action).....

There is one other person I will ask-who is not here today.....but I am pretty sure he will say the same thing. If he says something different-I will let you know.

Hopefully this is the information you needed. If not please contact me.



Rule 525 Deed  
Notice

MID 078 400 165

KT  
1000 for  
completion and

3175634

LIBER 13669 PAGE 415

06/11/2003 03:22:30 P.M.

MACOMB COUNTY, MI

SEAL

CARNELLA GABAUGH, REGISTER OF DEEDS

NOTICE REGARDING STATUTORY  
OBLIGATION APPLICABLE TO PROPERTY

Ford Motor Company, the owner of the property described in Exhibit A hereto (the "Property"), is filing this notice with the Register of Deeds for Macomb County, Michigan, pursuant to State of Michigan Administrative Rule R299.9525 entitled Notice Requirements.

The Property has been used to manage hazardous waste and is subject to the corrective action requirements of Part 111 of the Hazardous Waste Management of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451) and Resource Conservation and Recovery Act, 42 U.S.C., Section 6901 et seq., as amended by the 1984 Hazardous and Solid Waste Amendments.

IN WITNESS WHEREOF, Ford Motor Company, has caused these presents to be executed this 12th day of May, 2003.

WITNESSES:

FORD MOTOR COMPANY

*Mary Ann Tobert*  
MARY ANN TOBERT

By: *Thomas DeZure*  
Thomas DeZure, Assistant Secretary

*Stacy R. Baker-Cole*  
STACY R. BAKER-COLE

STATE OF MICHIGAN )

)ss

COUNTY OF MACOMB )

On May 12, 2003, before me, a Notary Public, in and for said County, personally appeared Thomas DeZure, to me known to be the same persons described in and who executed the within instrument, who acknowledge the same to be their free act and deed.

Prepared by *Lawrence Merritt, Jr.*  
Lawrence Merritt, Jr.  
The American Road  
Dearborn, MI 48126

*Angela V. Singleton*  
ANGELA V. SINGLETON  
Notary Public, Macomb County, Michigan  
My Commission Expires November 30, 2003

ONLY AS GOOD AS ORIGINAL

Liber 013669 Page 00416

## Exhibit A

T5N R12E SEC 36 2001 CORRECTION BEG A SW COR SEC 36; TH N0°06'59"E 1910.84 FT  
ALG WEST SEC LINE; TH N89°34'31"W 74.78 FT; TH N21°10'18"E 90.85 FT; TH ALG A  
CURVE TO R, 56.83 FT, RAD=5669.95 FT, L/CH BEARS N48°43'24"E 56.83 FT; TH  
N0°06'59"E 1.33 FT; TH ALG A CURVE TO R, 1907.07 FT, RAD=5670.65 FT, L/CH BEARS  
N59°17'19"E 1898.10 FT; TH N68°55'23"E 2064.20 FT; TH S0°14'10"E 674.88 FT; TH  
N83°02'54"E 367.26 FT; TH S0°02'52"E 1933.54 FT; TH S88°30'38"W 487.13 FT; TH  
S00°02'52"E 1161.67 FT TO THE N'LY R/W OF 32 MILE; TH S89°22'24"W 1276.66 FT ALG  
SD R/W; TH N89°36'36"W 1415.92 FT ALG SD R/W; TH S89°48'24"W 752.50 FT TO POB;  
EXC THAT PART OF THE ABOVE DESC LYING SOUTH OF THE BRUCE TWP LINE; ALSO  
EXC THE FOLL R/W DESC; BEG AT SW COR SEC 36; TH N00°06'59"E 803.34 FT; TH  
S07°37'40"E 248.42 FT; TH S01°02'30"E 369.40 FT; TH S45°40'04"E 196.28 FT; TH  
S00°11'33"E 50.00 FT; TH S89°48'24"W 469.73 FT TO POB. 247.99 AC. +/-



Environmental Quality Office  
Environmental and Safety Engineering

Ford Motor Company  
Parklane Towers East  
One Parklane Blvd.  
Suite 1400  
Dearborn, MI 48126-2477

July 31, 2003

Mr. Clay Spencer  
MDEQ - WMD  
P.O. Box 30241  
Lansing, MI 48909-7741

**Subject: Romeo Engine Plant (MID 078 400 165) - Notice Regarding Statutory  
Obligation Applicable to Property**

Dear Mr. Spencer:

Please find attached a copy of the notice recorded by the Macomb County Register of  
Deeds.

Please contact me at (313) 322-5548 if you have any questions.

Sincerely,

Lawrence H. Merritt, Jr.  
Ford Environmental Quality Office

Enclosure

Waste & Hazardous  
Materials Division

AUG - 5 2003



Rule 525  
Deed Notice  
MID 078 400 165

**NOTICE REGARDING STATUTORY  
OBLIGATION APPLICABLE TO PROPERTY**

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IN WITNESS WHEREOF, Ford Motor Company, has caused these presents to be executed this 12th day of May, 2003.

WITNESSES:

FORD MOTOR COMPANY

*Mary Ann Tobey*  
MARY ANN TOBEY

By:

*Thomas DeZure*  
Thomas DeZure, Assistant Secretary

*Stacy R. Baker-Cole*  
STACY R. BAKER-COLE

STATE OF MICHIGAN     )  
                                      )ss  
COUNTY OF MACOMB    )

On May 12, 2003, before me, a Notary Public, in and for said County, personally appeared Thomas DeZure, to me known to be the same persons described in and who executed the within instrument, who acknowledge the same to be their free act and deed.

Prepared by:  
Lawrence Merritt, Jr.  
The American Road  
Dearborn, MI 48126

*Angela J. Singleton*

ANGELA J. SINGLETON  
Notary Public for the State of Michigan  
My Comm. Expires November 30, 2003

**Exhibit A**

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Environmental Quality Office  
Environmental and Safety Engineering

Ford Motor Company  
Parklane Towers East  
One Parklane Blvd.  
Suite 1400  
Dearborn, MI 48126-2477

May 16, 2003

Mr. Clay Spencer  
MDEQ – WMD  
P.O. Box 30241  
Lansing, MI 48909-7741

**Subject: Romeo Engine Plant (MID 078 400 165) – Notice Regarding Statutory  
Obligation Applicable to Property**

Dear Mr. Spencer:

Please find attached a copy of the above notice sent to the Macomb County Register of Deeds. I have been told that the recorded copy will be returned to me within 6-8 weeks. I will forward a final copy to your attention at that time.

Please contact me at (313) 322-5548 if you have any questions.

Sincerely,

A handwritten signature in cursive script, appearing to read "Lawrence H. Merritt, Jr.".

Lawrence H. Merritt, Jr.  
Ford Environmental Quality Office

Enclosure





**FW: Ford Romeo Engine Plant**  
Tyson, Kimberly (DNRE) to: KathleenA Miller  
Cc: "Buda, Steve (DNRE)"

09/03/2010 06:49 AM

The DNRE has not conducted any actions at the facility. We have no updated files to share with EPA. Also see my note below.

---

From: Tyson, Kimberly (DNRE)  
Sent: Fri 9/3/2010 7:34 AM  
To: Spencer, Clay (DNRE); Rokosz, Susan (S.M.)  
Cc: Dailey, Daniel (DNRE); Buda, Steve (DNRE)  
Subject: RE: Ford Romeo Engine Plant

*\*SUMMU 1+2 under RCRA-  
check in 1993*

According to the December 31, 1993 Final PA/VSI Report the 2 former surface impoundments and container storage area 1 underwent RCRA closure in 1985, and 1984 respectively. No certification letter was located at the time of the report.

*SUMMU 2*

The DNRE has not initiated corrective action for this site yet.

---

From: Spencer, Clay (DNRE)  
Sent: Thu 9/2/2010 3:06 PM  
To: Rokosz, Susan (S.M.)  
Cc: Dailey, Daniel (DNRE); Tyson, Kimberly (DNRE); Buda, Steve (DNRE)  
Subject: RE: Ford Romeo Engine Plant

My only involvement with this site is the 525 deed notice. EPA has also asked about this site. Kimberly Tyson is the person assigned to the site and I have cc'd her on this email. She will get back to you.

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From: Rokosz, Susan (S.M.) [mailto:srokosz@ford.com]  
Sent: Thursday, September 02, 2010 12:23 PM  
To: Spencer, Clay (DNRE)  
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Hi Clay,

Does the attached letter, and the deed restriction we have, mean that we can consider the site RCRA-closed? I understand Michigan would still require us to call the site a TSDF for the Biennial Report.

US EPA Region V has inquired as to whether the site is RCRA-closed.

Thanks,

Sue Rokosz

313-322-3826

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To: Rokosz, Susan (S.M.)  
Subject: RE: Ford Romeo Engine Plant

Susan-from the people I have talked to as far as the Biennial Report- you still need to report as a TSD (whether closed or not).....attached is a letter regarding closure (actually regarding surface impoundments).....stating that they only handled non-haz waste.....but a drum storage area which was closed in 1985 (by EPA)-still leaves the facility as a TSD for corrective action purposes.....(referenced in the attached as HSWA-which required corrective action).....

There is one other person I will ask-who is not here today.....but I am pretty sure he will say the same thing. If he says something different-I will let you know.

Hopefully this is the information you needed. If not please contact me.

Clay Spencer

517-373-7968

---

From: Rokosz, Susan (S.M.) [mailto:srokosz@ford.com]  
Sent: Wednesday, August 25, 2010 10:59 AM  
To: Spencer, Clay (DNRE)  
Subject: Ford Romeo Engine Plant

Good morning Clay,

Thanks for the phone conversation earlier. The RCRA id number for the Romeo Engine Plant is MID078400165. I have also attached a copy of the deed restriction for your information.

Sue Rokosz



RE: Deed Restrictions- FORD MOTOR COMPANY, ROMEO, MI  
Spencer, Clay (DNRE)  
to:  
KathleenA Miller  
08/31/2010 08:55 AM  
Cc:  
"Buda, Steve (DNRE)"  
Show Details

I am not assigned to this facility-and am not sure who (if anyone) is. I processed their deed notice (which is not the same as a deed restriction).....and it is attached, but that has been my only connection. However Steve Buda (who I have cc'd) should be able to forward your note to the appropriate staff person. (Steve its MID 078 400 165).....

---

**From:** Miller.KathleenA@epamail.epa.gov [mailto:Miller.KathleenA@epamail.epa.gov]  
**Sent:** Tuesday, August 31, 2010 9:39 AM  
**To:** Spencer, Clay (DNRE)  
**Subject:** Fw: Deed Restrictions- FORD MOTOR COMPANY, ROMEO, MI

To Mr. Spencer:

I received your contact information from Gerald Yarema with the Ford Motor Company in Romeo, Michigan. I spoke with Mr. Yarema on Friday, August 13, 2010 and he informed me that his facility has been working with the MDEQ on deed restrictions. Our office is actually in the process of updating our records on sites that may need corrective action. We have not received any documentation since the Preliminary Assessment/Visual Site Inspection (PAVSI) report was prepared back on 12/31/93 for this facility. Mr. Yarema did not seem familiar with this report and was not able to answer my questions regarding whether or not any soil or groundwater sampling has been conducted on his property or if the facility is involved in a state voluntary remediation program etc.

Again, we are updating our files to reflect the current clean up activities on this property. If you have additional records (besides the email below) of this property relating to remediation activities (since '93), we would really appreciate obtaining copies (via email).  
Thank you.

---

Kathleen Miller  
Environmental Protection Specialist  
RCRA Corrective Action  
U.S. EPA Region 5  
77 West Jackson Blvd.  
Chicago, IL 60604  
312-886-6761  
Miller.KathleenA@epa.gov

----- Forwarded by KathleenA Miller/R5/USEPA/US on 08/30/2010 05:15 PM -----

From: "Yarema, Gerald (G.J.)" <gyarema@ford.com>  
To: KathleenA Miller/R5/USEPA/US@EPA  
Cc: "Yarema, Gerald (G.J.)" <gyarema@ford.com>  
Date: 08/13/2010 11:43 AM  
Subject: FW: Deed Restrictions

---

-----Original Message-----

From: Merritt, Lawrence (L.H.)  
Sent: Wednesday, May 21, 2003 2:55 PM  
To: Yarema Jr., Gerald (G.J.)  
Cc: Baguzis, John (J.C.); Hilbert, Linda (L.M.)  
Subject: FW: Deed Restrictions

Jerry: For info. DEQ is fine with the deed restriction. I'll send in the final copy when I receive it.

Sincerely,  
Larry Merritt

Ford Environmental Quality Office  
(313) 322-5548 / Fax: (313) 248-5030  
lmerrit2@ford.com

-----Original Message-----

From: Clay Spencer [<mailto:SPENCERC@michigan.gov>]  
Sent: Wednesday, May 21, 2003 2:43 PM  
To: lmerrit2@ford.com  
Subject: RE: Deed Restrictions

Larry-I received the Rule 525 Deed Notice for the Forn Romeo Plant today-and it looks good. Just send me a copy of the "final copy" as you suggested in the cover letter. Thanks.

>>> "Merritt, Lawrence (L.H.)" <lmerrit2@ford.com> 05/19/03 11:37AM

>>>

Thanks Clay.



**Fw: Deed Restrictions - FORD MOTOR COMPANY, ROMEO, MI**

**KathleenA Miller to: spencerc**

**08/31/2010 08:38 AM**

To Mr. Spencer:

I received your contact information from Gerald Yarema with the Ford Motor Company in Romeo, Michigan. I spoke with Mr. Yarema on Friday, August 13, 2010 and he informed me that his facility has been working with the MDEQ on deed restrictions. Our office is actually in the process of updating our records on sites that may need corrective action. We have not received any documentation since the Preliminary Assessment/Visual Site Inspection (PAVSI) report was prepared back on 12/31/93 for this facility. Mr. Yarema did not seem familiar with this report and was not able to answer my questions regarding whether or not any soil or groundwater sampling has been conducted on his property or if the facility is involved in a state voluntary remediation program etc.

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Kathleen Miller  
Environmental Protection Specialist  
RCRA Corrective Action  
U.S. EPA Region 5  
77 West Jackson Blvd.  
Chicago, IL 60604  
312-886-6761

Miller.KathleenA@epa.gov

----- Forwarded by KathleenA Miller/R5/USEPA/US on 08/30/2010 05:15 PM -----

---

From: "Yarema, Gerald (G.J.)" <gyarema@ford.com>  
To: KathleenA Miller/R5/USEPA/US@EPA  
Cc: "Yarema, Gerald (G.J.)" <gyarema@ford.com>  
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Larry Merritt

Ford Environmental Quality Office  
(313) 322-5548 / Fax: (313) 248-5030  
lmerrit2@ford.com

-----Original Message-----

From: Clay Spencer [mailto:SPENCERC@michigan.gov]

Sent: Wednesday, May 21, 2003 2:43 PM

To: lmerrit2@ford.com

Subject: RE: Deed Restrictions

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>>> "Merritt, Lawrence (L.H.)" <lmerrit2@ford.com> 05/19/03 11:37AM

>>>

Thanks Clay.



**FW: Deed Restrictions**  
Yarema, Gerald (G.J.) to: KathleenA Miller  
Cc: "Yarema, Gerald (G.J.)"

08/13/2010 11:43 AM

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Ford Environmental Quality Office  
(313) 322-5548 / Fax: (313) 248-5030  
lmerrit2@ford.com

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>>> "Merritt, Lawrence (L.H.)" <lmerrit2@ford.com> 05/19/03 11:37AM  
>>>  
Thanks Clay.





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5

MEMORANDUM

DATE:

SUBJECT:

Determination of Need for an Investigation

Facility Name: Ford Motor (Romeo Engine Plant)

EPA ID #: MD 078 460 165

FROM:

Kathleen Miller

Kathleen Miller, Environmental Protection Specialist

TO: George Hamper, Chief, Corrective Action Section 2

I recommend the following determination regarding the need for an investigation:

☐ CA070NO Determination of Need for an Investigation-Investigation is not Necessary

Reason for Determination

- ☐ Preliminary Assessment/Visual Site Inspection (PA/VSI) did not recommend any further investigation
- ☐ PA/VSI recommendations do not warrant RRB attention
- ☐ Phase 1 Environmental Site Assessment (ESA) did not recommend further investigation
- ☐ Phase 2 ESA did not recommend further investigation
- ☐ Phase 1/Phase 2 ESA recommendations do not warrant RRB attention
- ☐ Company representative asserts that the site is clean
- ☐ Not subject to corrective action
- ☐ Enrolled in other clean-up program
- ☐ PA/VSI recommendations have been implemented
- ☐ Superfund Removal
- ☐ Participating in Voluntary Remediation Program
- ☐ Completed Voluntary Remediation Program
- ☐ Superfund Remedial Action
- ☐ Superfund No Further Action Decision
- ☐ Superfund Base Relocation and Closure
- ☐ Other \_\_\_\_\_

☐ CA070YE Determination of Need for an Investigation - Investigation is Necessary

Reason for Determination

- ☐ PA/VSI recommends further investigation
- ☐ ESA recommends further investigation
- ☐ Other NOEB stated the site is subject to CA requirements - no further action made

☐ No determination can be made - More Information Needed

☐ Approved

☐ Not Approved

Signed: \_\_\_\_\_ Date: \_\_\_\_\_





**Determination: Groundwater remediation, sampling, submit closure**  
**PA/VSİ Or RFA FILE REVIEW CHECKLIST**

Facility Name: Ford Motor (Romeo Engine Plt.)

EPA ID: MID 078 400 165 City: 701 E 32 Mile Rd Romeo, Macomb Co. State: MI

Name of Reviewer: Maureen McHugh Date of Review: 8/14/08

1	Yes	No	Is this a one folder site?
2	Yes	No	Are there Superfund files for this site?
3	Yes	No	Did you Read the Executive Summary?
			There are: <u>11</u> SWMUs and <u>4</u> AOCs at this site.
4	Yes	No	Did you review the regulatory history?
5	Yes	No	Does the facility have interim status or a permit?
			This facility is a: <u>    </u> SQG, <u>  X  </u> LQG, or <u>    </u> Less than 90 day.
6	Yes	No	Was the Facility closed per RCRA?
			If Yes, was the closure: <u>  X  </u> CC, or <u>    </u> CIP.
7	Yes	No	Are there documented (historical) releases? Briefly describe on Page 2.
8	Yes	No	Were there releases identified during the inspection? Briefly describe on Page 2.
9	Yes	No	Do you agree with the Conclusions and Recommendations?
			If No, briefly describe on Page 2.

As a result of your review of the PA/VSİ or RFA file, please classify this site as:

     No further corrective action recommended or warranted: These are sites that closed the regulated units and any other SWMUs or AOCs at the site did not warrant any further corrective action (no historic releases or evidence of releases observed during the Visual Site Inspection).

  X   Further Action Required: Soil or sediment sampling or groundwater sampling or monitoring or any type of investigation that was recommended in the report in response to a documented or observed release at any SWMU or AOC and where such investigation, whether being addressed during the inspection or after, does not have the necessary documentation in the facility record files.

     More Information Needed: There is no RFA, PA/VSİ or RCRA closure information available.

## PA/VSI Or RFA FILE REVIEW CHECKLIST

### Notes

2 USTs (gasoline and diesel fuel) were removed from the utility building (AOC1) in 1989 and there was no information on the tanks' removal. The Former Paint Kitchen Sump (SWMU6) was removed in 1988 and no samples were taken.

Briefly describe any documented (historical) releases for any SWMU or AOC recorded in the report. For each release, please identify the SWMU or AOC and a one or two line description of release.

- In 1978 heavy rains caused an overflow of the retention pond (AOC4) to East Pond Creek. Pipes were installed to prevent a recurrence.
- In 1983 The Ford lagoons overflowed into the storm pond and a light oil sheen was observed on the retention pond (AOC4) outfall to East Pond Creek. NFA was taken.
- In 1984 there was a discharge at the outfall that produced a light oil sheen. Containment equipment was installed.
- In 1984 the retention pond (AOC4) to East Pond Creek overflowed. No action was required.
- In 1984 wastewater overflowed onto the ground surface from the WWTP. No significant impact to the creek. MDNR Log#07-84-01-0099
- Ford removed about 1000yd<sup>3</sup> of contaminated soil from the former CSA (SWMU2) during closure in 1983. Soil samples collected in the excavation showed less than 1mg/kg of VOCs and metals below EPA interim drinking water standards.
- In 1983 an unspecified amount of soil beneath the waste oil tanks within the WWTP was removed and disposed of. A concrete pad was installed after the removal.
- In 1985, 1250yd<sup>3</sup> of sludge and residue from the former surface impoundments (SWMU1). Samples indicated that metals concentrations of the EPA toxicity test leachate were below the EPA interim drinking water standards. Following removal, the units were backfilled with clean soil and monitored for a release to groundwater. No increases in the indicator parameters were noted, so the groundwater monitoring was discontinued in 1986.
- In 1985, 120yd<sup>3</sup> of contaminated soil was removed from beneath the treatment tanks within the WWTP. Random soil borings were collected in the area of the removed soil and analyzed for EP toxicity. The sample did not yield hazardous concentrations of contaminants.
- Xylene contaminated soil was removed from the tank farm area (AOC3) in 1988 but sample collection & analysis and the amount of soil disposed of was not available.
- In 1990 and 1991, gasoline was released from a UST (AOC2). Approx. 6265yd<sup>3</sup> of soil was removed and disposed of off site. Groundwater samples indicated BTEX and MTBE contamination. Ford planned to remediate the groundwater by a vacuum-enhanced sparging system.

Briefly describe any releases observed during the inspection for any SWMU or AOC recorded in the report. For each release, please identify the SWMU or AOC and a one or two line description of release.

### PA/VSI Recommendations

Documentation of the former CSA3 (SWMU4) waste practices and submit closure. Submit documentation of the sump's (SWMU6), the USTs (AOC1), and the former tank farm (AOC3) removal. Remediate the groundwater at the USTs (AOC2). Collect sediment samples from the retention pond (AOC4) and analyze them for hazardous constituents.

Looked up in MI UST database ID#00015327. 3 tanks removed from the ground, 2 currently in use. 2 LUST spills, ID#C-2641-90 and #C-1005-91 closed in 1998 with deed restrictions.

## CORRECTIVE ACTION STABILIZATION QUESTIONNAIRE

Completed by: Mary Wojciechowski  
Date: March 11, 1994

### Background Facility Information

Facility Name: Ford Motor Company Romeo Engine Plant  
(formerly Romeo Tractor Plant)  
EPA Identification No.: MID 078 400 165  
Location (City, State): Romeo, Michigan  
Facility Priority Rank: Moderate

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1. Is this checklist being completed for one solid waste management unit (SWMU), several SWMUs, or the entire facility? Explain.

Entire facility which consists of 11 SWMUs and 4 AOCs.

### Status of Corrective Action Activities at the Facility

2. What is the current status of HSWA corrective action activities at the facility?

- ☐ No corrective action activities initiated (Go to 5)  
☒ RCRA Facility Assessment (RFA) or equivalent completed  
☐ RCRA Facility Investigation (RFI) underway  
☐ RFI completed  
☐ Corrective Measures Study (CMS) completed  
☐ Corrective Measures Implementation (CMI) begun or completed  
☐ Interim Measures begun or completed

3. If corrective action activities have been initiated, are they being carried out under a permit or an enforcement order?

- ☐ Operating permit  
☐ Post-closure permit  
☐ Enforcement order  
☒ Other (Explain)

Most past corrective actions have been voluntary; some were part of RCRA closure.

4. Have interim measures, if required or completed [see Question 2], been successful in preventing the further spread of contamination at the facility?

- ☐ Yes  
☐ No  
☐ Uncertain; still underway  
☒ Not required

### Additional explanatory notes:

Interim measures have not been officially required. However, the facility plans to implement a vacuum-enhanced air sparging system for groundwater contamination near some gasoline USTs.



## Facility Releases and Exposure Concerns

5. To what media have contaminant releases from the facility occurred or been suspected of occurring?

- ☒ Groundwater  
☒ Surface water  
☐ Air  
☒ Soils

6. Are contaminant releases migrating off-site?

- ☐ Yes; Indicate media, contaminant concentrations, and level of certainty.

Groundwater:

Surface water:

Air:

Soils:

- ☐ No  
☒ Uncertain

- 7a. Are humans currently being exposed to contaminants released from the facility?

- ☐ Yes (Go to 8a)  
☐ No  
☒ Uncertain

Additional explanatory notes:

It is not known if contaminants have migrated off site.

- 7b. Is there a potential for human exposure to the contaminants released from the facility over the next 5 to 10 years?

- ☒ Yes  
☐ No  
☐ Uncertain

Additional explanatory notes:

East Pond Creek which crosses the facility's northeast corner is used for recreation. Groundwater is used as a municipal and private water supply near the facility.

- 8a. Are environmental receptors currently being exposed to contaminants released from the facility?

- ☐ Yes (Go to 9)  
☐ No  
☒ Uncertain

Additional explanatory notes:

It is not known if contaminants have migrated off site.

- 8b. Is there a potential that environmental receptors could be exposed to the contaminants released from the facility over the next 5 to 10 years?

- ☒ Yes  
☐ No  
☐ Uncertain

Additional explanatory notes:

Wetlands are located along East Pond Creek.



### Anticipated Final Corrective Measures

9. If already identified or planned, would final corrective measures be able to be implemented in time to adequately address any existing or short-term threat to human health and the environment?

☐ Yes  
☒ No  
☐ Uncertain

Additional explanatory notes:

Final corrective measures have not been identified or planned.

10. Could a stabilization initiative at this facility reduce the present or near-term (e.g., less than two years) risks to human health and the environment?

☐ Yes  
☐ No  
☒ Uncertain

Additional explanatory notes:

Although the facility plans to remediate groundwater in one area, there are many other suspected source areas where the nature and extent of contamination has not been fully determined.

11. If a stabilization activity were not begun, would the threat to human health and the environment significantly increase before final corrective measures could be implemented?

☐ Yes  
☐ No  
☒ Uncertain

Additional explanatory notes:

Although the facility plans to remediate groundwater in one area, there are many other suspected source areas where the nature and extent of contamination has not been fully determined.

### Technical Ability to Implement Stabilization Activities

12. In what phase does the contaminant exist under ambient site conditions? Check all that apply.

☒ Solid  
☐ Light non-aqueous phase liquids (LNAPLs)  
☐ Dense non-aqueous phase liquids (DNAPLs)  
☒ Dissolved in groundwater or surface water  
☐ Gaseous  
☐ Other \_\_\_\_\_

13. Which of the following major chemical groupings are of concern at the facility?

☒ Volatile organic compounds (VOCs) and/or semi-volatiles  
☐ Polynuclear aromatics (PAHs)  
☐ Pesticides  
☐ Polychlorinated biphenyls (PCBs) and/or dioxins  
☐ Other organics  
☒ Inorganics and metals  
☐ Explosives  
☐ Other \_\_\_\_\_





14. Are appropriate stabilization technologies available to prevent the further spread of contamination, based on contaminant characteristics and the facility's environmental setting? [See Attachment A for a listing of potential stabilization technologies.]

☐ Yes; Indicate possible course of action.

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☒ No; Indicate why stabilization technologies are not appropriate; then go to Question 18.

Although the facility plans to remediate groundwater in one area, there are many other suspected source areas where the nature and extent of contamination has not been fully determined.

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15. Has the RFI, or another environmental investigation, provided the site characterization and waste release data needed to design and implement a stabilization activity?

☐ Yes  
☐ No

If No, can these data be obtained faster than the data needed to implement the final corrective measures?

☐ Yes  
☐ No

#### Timing and Other Procedural Issues Associated with Stabilization

16. Can stabilization activities be implemented more quickly than the final corrective measures?

☐ Yes  
☐ No  
☐ Uncertain

Additional explanatory notes:

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17. Can stabilization activities be incorporated into the final corrective measures at some point in the future?

☐ Yes  
☐ No  
☐ Uncertain

Additional explanatory notes:

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**Conclusion**

18. Is this facility an appropriate candidate for stabilization activities?

- ☐ Yes
- ☐ No, not feasible
- ☐ No, not required
- ☒ Further investigation necessary

Explain final decision, using additional sheets if necessary.

This information was obtained from a 1993 PA/VSI prepared by PRC.

There have been numerous releases to soil and groundwater at the facility. The facility plans to remediate contaminated groundwater near some gasoline USTs but there are many other suspected source areas where the nature and extent of contamination is not known. These areas include:

- Former surface impoundments
- Former paint kitchen sump
- The wastewater treatment plant
- Former utility building USTs
- A stormwater retention pond
- Former xylene storage tanks

Additional stabilization may be required pending further investigation in these area.





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
37 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

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HRE-8J

JAN 31 1995

February 3, 1994

Ms. Staci Swatsenbarg  
Ford Romeo Engine Plant  
701 East 32 Mile Road  
Romeo, MI 48065

Re: Visual Site Inspection  
Ford Romeo Engine Plant  
(formerly Romeo Tractor and Equipment  
Plant)  
Romeo, Michigan  
MID 078 400 165

Dear Ms. Swatsenbarg:

The U.S. Environmental Protection Agency is enclosing a copy of the final Preliminary Assessment/ Visual Site Inspection (PA/VSI) report for the referenced facility. The executive summary and conclusions and recommendations sections have been withheld as Enforcement Confidential.

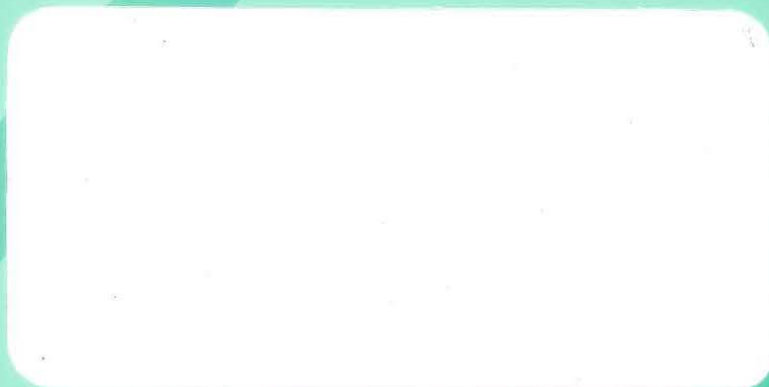
If you have any questions, please call Francene Harris at (312) 886-2884.

Sincerely yours,

Kevin M. Pierard, Chief  
Minnesota/Ohio Technical Enforcement Section  
RCRA Enforcement Branch



**U.S. Environmental Protection Agency**  
Office of Waste Programs Enforcement  
Contract No. 68-W9-0006



# **TES 9**

**Technical Enforcement Support  
at Hazardous Waste Sites  
Zone III  
Regions 5,6, and 7**

***PRC***

**PRC Environmental Management, Inc.**



**PRELIMINARY ASSESSMENT/  
VISUAL SITE INSPECTION**

**FORD MOTOR COMPANY ROMEO ENGINE PLANT  
(FORMERLY ROMEO TRACTOR PLANT)  
ROMEO, MICHIGAN  
MID 078 400 165**

**FINAL REPORT**

**Prepared for**

**U.S. ENVIRONMENTAL PROTECTION AGENCY  
Office of Waste Programs Enforcement  
Washington, DC 20460**

Work Assignment No.	:	R05032
EPA Region	:	5
Site No.	:	MID 078 400 165
Date Prepared	:	December 31, 1993
Contract No.	:	68-W9-0006
PRC No.	:	309-R05032MI63
Prepared by	:	PRC Environmental Management, Inc. Ron Baker
Contractor Project Manager	:	Shin Ahn
Telephone No.	:	(312) 856-8700
EPA Work Assignment Manager	:	Kevin Pierard
Telephone No.	:	(312) 886-4448





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### Appendix

- A VISUAL SITE INSPECTION SUMMARY AND PHOTOGRAPHS
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EXECUTIVE SUMMARY

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PRC Environmental Management, Inc. (PRC), performed a preliminary assessment and visual site inspection (PA/VSI) to identify and assess the existence and likelihood of releases from solid waste management units (SWMU) and other areas of concern (AOC) at the Ford Motor Company, Romeo Engine Plant (Ford) facility (EPA Identification No. MID 078 400 165) in Romeo, Macomb County, Michigan. This summary highlights the results of the PA/VSI and the potential for releases of hazardous wastes or hazardous constituents from SWMUs and AOCs identified.

The Ford facility is located at 701 East 32 Mile Road, approximately 1 mile east of Romeo, Michigan. The facility occupies 285 acres in a predominantly rural setting. Currently, approximately 120 acres are under roof at the facility. Prior to 1973, the area occupied by the facility was farmland. The facility employs approximately 930 people in two shifts.

The current facility was retooled in 1988. The facility currently produces V-8 engines for Ford luxury cars. Prior to retooling in 1988, the facility manufactured Ford tractors and backhoes. The tractor and backhoe manufacturing operations began in 1974, immediately after the facility was constructed.

The facility currently generates four hazardous and five nonhazardous waste streams. The hazardous waste streams include (1) waste antifreeze (D008); (2) waste diesel fuel (D001); (3) waste gasoline (D001); and (4) Safety-Kleen Corporation (Safety-Kleen) solvent (D001, D018, and D039). The nonhazardous waste streams include nonhazardous metal chips, grinding sludge, oil filters, waste oil, and wastewater. The Ford facility's waste generating activities changed drastically when the plant was retooled in 1988. Prior to retooling, the facility generated hazardous phosphating wastewater treatment plant sludge (formerly listed as F006) and waste paint and spent solvent (D001 and F003). Previous nonhazardous wastes included paint sludge, paint chips, and industrial wastewater.

Ford's Notification of Hazardous Waste Activity form was submitted to EPA on August 12, 1980. The notification listed F001, F003, F017, F018, D000, and D001 hazardous waste codes. In 1988, Ford submitted a subsequent notification form listing only D001 and D002 hazardous waste codes. However according to facility representatives, the facility has not generated D002 wastes. The



subsequent notification followed the facility's change in status from a hazardous waste generator and treatment, storage, and disposal facility to exclusively a hazardous waste generator.

Ford's Part A permit application submitted on November 18, 1980, included storage in containers (SWMUs 2, 3, and 4), storage in tanks (SWMU 5), storage in surface impoundments (SWMU 1), and treatment in surface impoundments (SWMU 1). According to the Part A permit application, the following hazardous wastes were generated: D001, K021, D004, D006, D007, P030, D008, D009, D010, D011, F001, F003, F011, F017, and F018. Ford submitted a revised Part A permit application on January 31, 1984. The revised Part A permit application listed only storage in Surface Impoundments (SWMU 1) and treatment in Surface Impoundments (SWMU 1) of F006 waste.

The closure plan for Former Container Storage Area (CSA) 1 was approved by the EPA on April 17, 1984. Ford submitted the closure plan certification for Former CSA 1 (SWMU 2) on January 31, 1984. Ford did not submit closure plans for Former CSAs 2 and 3 (SWMUs 3 and 4) included in the Part A permit application. Ford submitted a closure plan for the surface impoundments on August 2, 1984. The closure plan was approved by the EPA with minor modifications on March 11, 1985. Ford submitted certification of the closure on December 13, 1985. Details of the closure are discussed in Sections 2.4 and 2.5 of this report. The tank storage listed in the Part A permit application was not closed. Facility representatives indicated that four 10000-gallon storage tanks in the Wastewater Treatment Plant (WWTP) (SWMU 5) were erroneously listed on the Part A permit application as hazardous waste storage tanks. Ford did not submit a closure plan for the erroneously filed storage tanks. However, the facility's current RCRA status does not include storage activities.

The PA/VSI identified the following 11 SWMUs and 4 AOCs at the facility:

Solid Waste Management Units

1. Former Surface Impoundments
2. Former CSA 1
3. Former CSA 2
4. Former CSA 3
5. WWTP
6. Former Paint Kitchen Sump
7. 90-Day CSA
8. Grinding Sludge Hoppers

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9. Metal Chip Hoppers
10. Oil Garage
11. Shipping Area

Areas of Concern

1. Utility Building Underground Storage Tanks (UST)
2. Dynamometer USTs
3. Former Tank Farm
4. Retention Pond

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The Ford facility has a history of documented releases to groundwater, surface water, and on-site soils at the facility. Ford reported several incidents between 1978 and 1985 involving releases from the WWTP (SWMU 5) and the Former Surface Impoundments (SWMU 1), that impacted surface water in East Pond Creek.

On July 4, 1984, Ford reported that an overflow of wastewater from a pretreatment plant resulted in a release to soil from the WWTP (SWMU 5).

Ford removed approximately 1,000 cubic yards of contaminated soil from the area occupied by CSA 1 during its closure in July and August of 1983. Because the approved closure plan submitted to the EPA did not include characterizing the contaminated soil, no analytical data for the contaminated soil is available. According to the closure plan, the contaminated soil was removed and disposed of by Wayne Disposal, Inc. (EPA Identification No. MID 048 090 633). EPA approved the closure plans in 1984.

In October 1983, soil beneath the waste oil tanks within the WWTP was removed and disposed of in an unspecified hazardous waste landfill. A concrete pad was constructed in this area following the soil removal. According to available information, no soil samples were collected in the area of the waste oil tanks during the soil removal. Therefore, the characteristics and extent of potential contamination are unknown.

Ford began excavating sludge and residue from the Former Surface Impoundments (SWMU 1) in 1985. Approximately 1,250 cubic yards of material was removed from the Former Surface Impoundments and disposed of in the Wayne Disposal Landfill, Detroit, Michigan. The remaining



soil was sampled and analyzed per the Extraction Procedure (EP) toxicity test method. No contaminants were detected in the soil extract above drinking water standards. Following the soil removal, the units were backfilled with clean soil and monitored for release to groundwater. No statistically significant RCRA indicator parameters were detected in the groundwater monitoring wells, and monitoring was discontinued in 1986.

During modifications to the WWTP in 1985, approximately 120 cubic yards of contaminated soil was removed from beneath the treatment tanks within the WWTP. The contaminated soil was disposed of at the Wayne Disposal Landfill in Detroit, Michigan. Random soil borings were collected in the area of removed soil, composited, and analyzed for EP toxicity. The composite sample did not yield hazardous concentrations of EP toxicity constituents.

Xylene-contaminated soil was removed from the Former Tank Farm Area (AOC 3) during retooling activities conducted in 1988. Apparently the contaminated soil was disposed of off site at a hazardous waste landfill. However, information concerning the amount of soil disposed of and the extent of contamination was not available.

On December 11, 1990, and again on May 26, 1991, gasoline was released from a 10000-gallon underground storage tank (UST). Ultimately, 6,265 cubic yards of soil was removed from the vicinity of the Dynamometer USTs (AOC 2). Groundwater samples collected from the groundwater monitoring wells indicated benzene, toluene, ethylbenzene, and xylene (BTEX), and methyl tertiary butyl ether (MTBE) contamination extending 90 feet east-northeast and 160 feet south of the initial gasoline spill area. Ford plans to remediate the contaminated groundwater by a vacuum-enhanced air sparging system. The implementation of the groundwater remediation system is contingent upon the results of field tests and the approval of the Michigan Department of Natural Resources (MDNR).

The Ford facility occupies approximately 285 acres in a predominantly mixed-use agricultural and residential rural setting. The Village of Romeo, Michigan lies approximately 1 mile to the west of the Ford facility. Romeo has a population of approximately 2,000.

The facility is bordered on the north by farmland, on the west by residential areas, on the south by a golf course and farmland, and on the east by farmland. Access to the facility is controlled by security

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guards at all gates and doors 24 hours per day, 7 days per week. The nearest surface water body, East Pond Creek crosses the northeast portion of the facility and is assumed to be used for recreational purposes downstream from the facility. According to a hydrogeological investigation conducted by a consultant to Ford, groundwater is exploited in the area of the Ford facility for municipal, agricultural, and private water supply. The Village of Romeo operates a municipal well field approximately 5 miles northwest of the Ford facility. Several residences along 32 Mile Road use private wells. The nearest downgradient private well is approximately 1,000 feet east of the Ford facility. Several wetland areas are located within a 2-mile radius of the facility. The wetland areas lie along East Pond Creek and are typically described as palustrine ecological systems comprised of emergent and scrub and shrub classes.

The potential for release to groundwater, surface water, air, and on-site soils from the following SWMUs is low: Former Surface Impoundments (SWMU 1); Former CSA 1 (SWMU 2); Former CSA 2 (SWMU 3); WWTP (SWMU 5); 90-Day CSA (SWMU 7); Grinding Sludge Hoppers (SWMU 8); Metal Chip Hoppers (SWMU 9); Oil Garage (SWMU 10); and Shipping Area (SWMU 11). SWMUs 1 and 2 have undergone RCRA closure. SWMUs 3, 5, 7, 8, 9, 10, and 11 are either located inside buildings on sound drain-free floors and are managed in accordance with current regulations or were operated in areas and in ways that would have reduced the likelihood of a release to environmental and human receptors. Therefore, further action is not recommended for the above SWMUs.

The Utility Building USTs (AOC 1) may present a low to moderate potential of release to groundwater and on-site soil. A release was observed to groundwater and on-site soil from the Dynamometer USTs (AOC 2). The Former Tank Farm (AOC 3) and the Former Paint Kitchen Sump (SWMU 6) may present a moderate potential of release to groundwater and on-site soils. The Retention Pond (AOC 4) may present a moderate potential of release to groundwater. The potential for release to groundwater, surface water, air and on-site soils from CSA 3 (SWMU 4) is unknown.

Ford should submit documentation of removal of the Utility Building USTs (AOC 1) and the Former Paint Kitchen Sump (SWMU 6) to the MDNR. Remediation plans for the observed release from the Dynamometer USTs (AOC 2) should be submitted to the MDNR. Corrective actions should proceed with the approval of the MDNR. Ford should submit information describing the extent and character

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of contaminated soil encountered during the removal of the Former Tank Farm (AOC 3). Ford should collect sediment samples from the Retention Pond (AOC 4) and analyze them for hazardous constituents. CSA 3 (SWMU 4) was listed on Ford's original Part A permit application; however no information regarding waste management practices for this SWMU was available. Ford should submit documentation of waste management and closure activities for SWMU 4 to MDNR for review.

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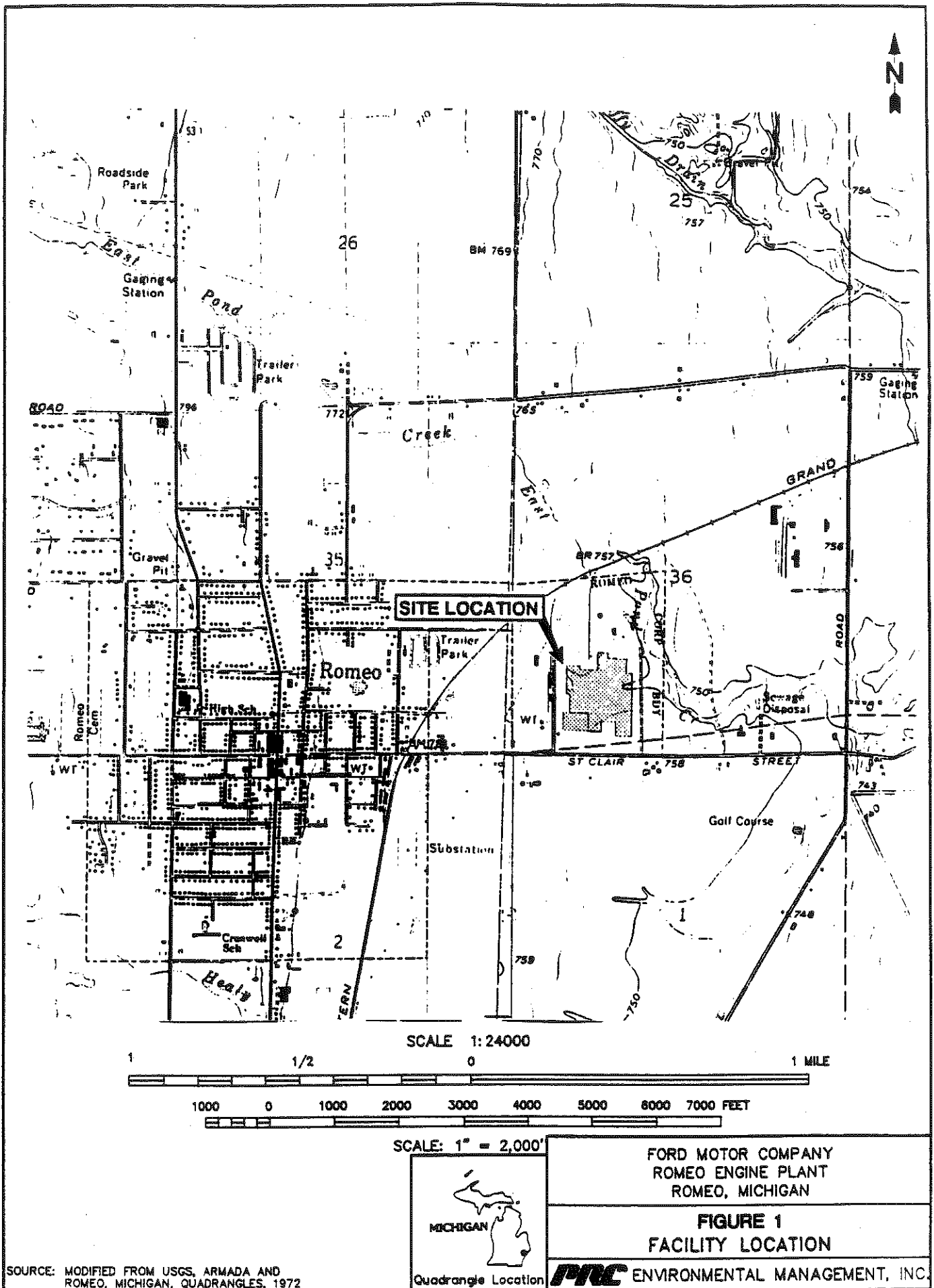
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Until 1988, the facility operated as a tractor production facility. Tractor engines and chassis components (backhoes, cabs, and buckets) were manufactured and assembled at the facility. The chassis manufacturing process included phosphate surface treatment followed by paint application. The phosphate treatment included a series of iron phosphate and rinse water baths. Painting was conducted in two booths located in the south central portion of the facility. The last tractor was manufactured at the plant in 1988.

The facility was retooled in 1988. Two additions to the main building were constructed in the former high density stock area and the backhoe subassembly area. Extensive changes were made to the interior of the building to accommodate the new machinery and the networked coolant fluid system. According the facility representatives, the wastewater treatment plant (WWTP) was reconfigured during the retooling period to perform oil recovery functions. According to the facility representatives the two 10000-gallon used oil storage tanks were replaced with two 20000-gallon tanks. However, PRC noted no record of the WWTP's modifications.

### **2.3 WASTE GENERATION AND MANAGEMENT**

This section describes waste generation and management at the Ford facility. Historic records regarding Ford's waste generation and management were not found during the file review. According to the facility representatives, Ford did not retain any record of waste management over three years. Therefore, much of the following information was obtained from interviews with the facility representatives during the VSI. The facility's SWMUs are identified in Table 1. The facility layout, including SWMUs and AOCs, is shown in Figure 2. The facility's waste streams are summarized in Table 2.

The Ford facility's waste generating activities changed drastically when the plant was retooled in 1988. The facility's Part A permit application included D001, K021, D004, D006, D007, D008, D009, D010, D011, P030, F011, F018, F017, F001, and F003 wastes codes. According to the facility representatives, several waste codes were erroneously placed in the Part A permit application. Those waste codes listed protectively included: K021, F001, F011, P030, D004, D006, D007, D008, D009, D010, and D011. F017 and F018 were delisted by the EPA in 1983 and subsequently omitted from Ford's Part A Permit Application.



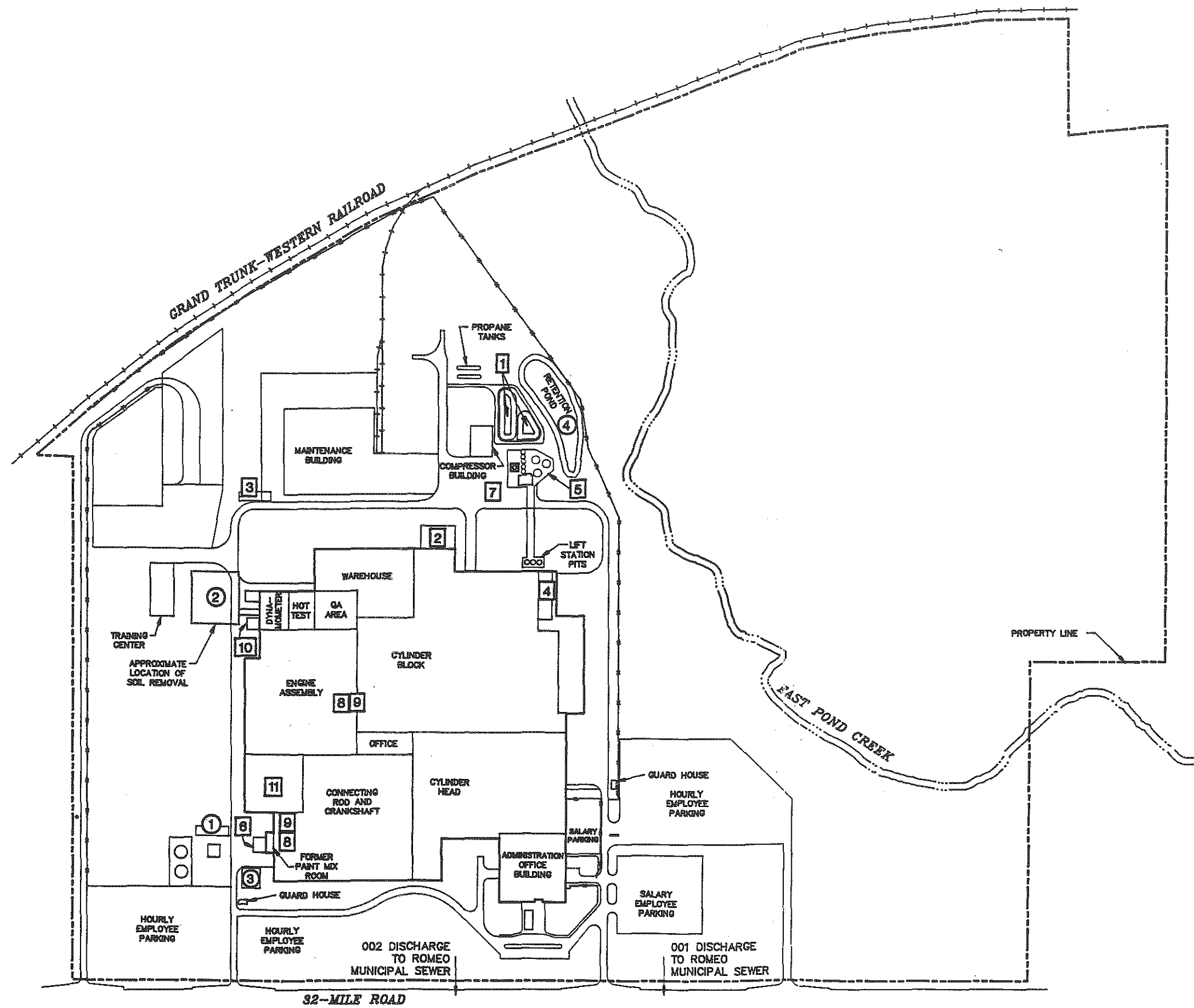
**TABLE 1**  
**SOLID WASTE MANAGEMENT UNITS**

<u>SWMU Number</u>	<u>SWMU Name</u>	<u>RCRA Hazardous Waste Management Unit<sup>a</sup></u>	<u>Status</u>
1	Former Surface Impoundments	Yes	Underwent RCRA closure
2	Former CSA 1	Yes	Underwent RCRA closure
3	Former CSA 2	No	Inactive
4	Former CSA 3	Unknown <sup>b</sup>	Inactive
5	WWTP	No	Active
6	Former Paint Kitchen Sump	No	Inactive
7	90-Day CSA	No	Active
8	Grinding Sludge Hoppers	No	Active
9	Metal Chip Hoppers	No	Active
10	Oil Garage	No	Active
11	Shipping area	No	Active

Note:

<sup>a</sup> A RCRA hazardous waste management unit is one that currently requires or formerly required submittal of a RCRA Part A or Part B permit application.

<sup>b</sup> This SWMU was listed as a RCRA Hazardous Waste Management Unit on the facility's 1980 Part A permit application. However, no information on waste management practices for this SWMU was available in the file or from facility representatives.

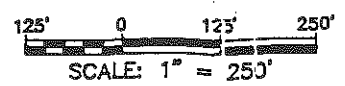


**AREA OF CONCERN DESCRIPTIONS**

- AOC ① UTILITY BUILDING USTS
- AOC ② DYNAMOMETER USTS
- AOC ③ FORMER TANK FARM
- AOC ④ RETENTION POND

**SOLID WASTE MANAGEMENT UNIT DESCRIPTIONS**

- SWMU ① FORMER SURFACE IMPOUNDMENTS
- SWMU ② FORMER CSA 1
- SWMU ③ FORMER CSA 2
- SWMU ④ FORMER CSA 3
- SWMU ⑤ WASTEWATER TREATMENT PLANT
- SWMU ⑥ PAINT KITCHEN SUMP
- SWMU ⑦ ACTIVE 90-DAY CSA
- SWMU ⑧ GRINDING SLUDGE HOPPER
- SWMU ⑨ METAL CHIPS HOPPER
- SWMU ⑩ OIL GARAGE
- SWMU ⑪ SHIPPING AREA



FORD MOTOR COMPANY ROMEO ENGINE PLANT ROMEO, MICHIGAN
<b>FIGURE 2</b> FACILITY LAYOUT
<b>PNC</b> ENVIRONMENTAL MANAGEMENT, INC.

FORDSITE.DWG - 09/16/93 - RAO - 308-R05032MIS3

SOURCE: MODIFIED FROM FORD ROMEO ENGINE PLANT, CAPACITY EXPANSION 1993

**TABLE 2**  
**SOLID WASTES**

<u>Waste/EPA Waste Code<sup>a</sup></u>	<u>Source</u>	<u>Solid Waste Management Unit<sup>b</sup></u>
<b><u>Currently Generated</u></b>		
Spent Antifreeze/D008	Engine coolant	SWMUs 7 and 10
Waste Diesel Fuel/D001	Engine fuel	SWMUs 7 and 10
Waste Gasoline/D001	Engine fuel	SWMUs 7 and 10
Safety-Kleen Solvent/D001, D018, D039	Parts washer	None
Metal Chips/NA	Cutting and grinding	SWMU 9
Grinding Sludge/NA	Cutting and grinding	SWMU 8
Oil Filters/NA	Engine tests	SWMU 11
Waste Oil/NA	WWTP	SWMU 5
Wastewater/NA	Contact and noncontact industrial cooling water	SWMU 5
<b><u>Formerly Generated</u></b>		
Phosphating Wastewater Treatment Plant Sludge/Prior F006	WWTP from steel surface treatment operation	SWMUs 1 and 5
Waste Paint and Spent Solvent/D001, F003	Paint booths and Paint Kitchen operations	SWMUs 2, 6, and 7
Paint Sludge and Chips/NA	Paint booths	SWMU 3
Wastewater/NA	Phosphating and cleaning operations and Spray Booth	SWMUs 1 and 5

**Notes:**

<sup>a</sup> Not applicable (NA) designates nonhazardous waste.

<sup>b</sup> "None" indicates that the waste stream is not managed on site.





The facility currently generates four hazardous and five nonhazardous waste streams. The hazardous waste streams include the following: (1) spent antifreeze (D008); (2) waste diesel fuel (D001); (3) waste gasoline (D001); and Safety-Kleen Corporation (Safety-Kleen) solvent (D001, D018, and D039). In 1988, the facility submitted a Notification of Hazardous Waste Activity form that listed generation of D002 wastes. However, according to facility representatives, to date the facility has not generated D002 waste.

Spent antifreeze from the engine coolant system in the dynamometer laboratory is disposed of at the rate of 100 gallons every 3 months. The spent antifreeze is accumulated in a 55-gallon drum in the Oil Garage (SWMU 10). When the 55-gallon drum is full, it may be moved to the 90-Day CSA (SWMU 7). Safety-Kleen Corporation collects and recycles the spent antifreeze every 90 days either from the oil garage or the 90-day CSA. The spent antifreeze is recycled at Safety-Kleen's facility in Dolton, Illinois (EPA Identification No. ILD 980 613 913).

Waste diesel fuel (D001) and waste gasoline (D001) are both generated in the Dynamometer Laboratory. Diesel and gas-powered engines are tested in the dynamometer laboratory. When engine tests are complete, the fuel lines are drained and the waste fuel is accumulated in a 55-gallon drum in the Oil Garage (SWMU 10). Full 55-gallon drums of waste diesel fuel and waste gasoline are taken to the 90-day CSA (SWMU 7). Approximately 100 gallons of each waste fuel is generated every year. The waste diesel fuel and waste gasoline are transported to Petrochem Processing (Petrochem) of Detroit, Michigan (EPA Identification No. MID 980 615 298) and blended with supplemental cement kiln fuel.

Spent Safety-Kleen solvent (D001, D018, and D039) is generated in a parts washer in the maintenance building. Safety-Kleen (EPA Identification No. MID 000 722 686) replaces the solvent in the unit approximately every 3 months. The spent solvent is reclaimed by Safety-Kleen of Detroit, Michigan.

Nonhazardous steel and aluminum metal chips are generated in several milling machines throughout the facility. Metal chips are physically separated from coolant fluid and placed in two steel Metal Chip Hoppers (SWMU 9). Coolant fluid is recirculated through the milling machines. One is located near the engine assembly area and holds approximately 1.5 cubic yards and the other is located



adjacent to the former paint mix room and holds approximately 20 cubic yards. The steel and aluminum metal chips are removed weekly by the highest bidding metal reclaimer. Ford generates approximately 500,000 pounds of metal chips each week.

Nonhazardous grinding sludge is generated during parts finishing at several machines throughout the facility. Coolant fluid at each machine traps the grindings and washes them into a network of channels connected to the coolant recovery system. Nonhazardous grinding sludge is separated from the coolant in the recovery unit. Grinding sludge is placed in two Grinding Sludge Hoppers (SWMU 8); one is located near the engine assembly area and holds approximately 1.5 cubic yards and the other is located near the former paint mix room and holds approximately 20 cubic yards. Ford generates approximately 800 cubic yards of grinding sludge each month. The grinding sludge is taken off site by City Environmental of Detroit, Michigan for treatment. After treatment, the grinding sludge is landfilled at Carlton Farms in Sumpter Township, Wayne County, Michigan.

Nonhazardous oil filters from test engines and machines are accumulated in 55-gallon drums with returnable shipping totes in the Shipping Area (SWMU 11). Ford generates approximately 50 drums of used filters every year. The drums of filters are picked up by City Environmental of Detroit, Michigan for disposal in a landfill.

Nonhazardous waste oil is generated during the acid-cracking reclamation process conducted in the WWTP (SWMU 5). Ford generates approximately 8,000 gallons of waste oil every week. Waste oil is skimmed from the industrial wastewater stream from the facility and accumulated in two above ground storage tanks. The two 20000-gallon tanks are located within the WWTP (SWMU 5). The waste oil is picked up by Edwards Oil and taken to their facility in Detroit, Michigan for further reclamation.

Wastewater generated in the WWTP (SWMU 5) is discharged to the Village of Romeo's publicly owned treatment works (POTW). Two outfalls, 001 and 002, are located along the main sanitary sewer line traveling in front of the facility. The wastewater is monitored daily for oil and grease, pH, phosphate, and metals. The facility is permitted to discharge 350 gallons of wastewater per minute to the POTW.



Before 1988 while the facility was manufacturing tractors, two hazardous and two nonhazardous waste streams were generated. Hazardous wastewater treatment sludge (F006) from the phosphating and cleaning operation was generated in the WWTP (SWMU 5). The phosphating wastewater treatment sludge was considered hazardous waste until 1986 when the EPA excluded phosphating treatment sludges from the F006 listing. Wastewater treatment sludge was stored in two Former Surface Impoundments (SWMU 1) and at the filter press within the WWTP. In 1986, the facility was generating approximately 24 cubic yards of wastewater treatment plant sludge every month. The wastewater treatment sludge was disposed of in a county operated municipal landfill (South Macomb Disposal Authority Landfill) the Wayne Disposal Landfill (MID 048 090 633) in Detroit, Michigan.

Waste paint and spent solvent (D001 and F003) were generated in the paint booths formerly operated at the facility. Paint gun flush and off-specification paints were placed in 55-gallon drums and stored in Former CSA 1 (SWMU 2). After Former CSA 1 was closed, drums of waste paint and spent solvent were stored for less than 90 days in the 90-day CSA (SWMU 7). Waste paint and spent solvents originating in the paint mix room and stored in the Former Paint Kitchen Sump (SWMU 6) for less than 90 days were pumped directly to transport vehicles for delivery to waste handling facilities (Ford 1986a). Waste paint and spent solvent was shipped to Systech Corporation in Paulding, Ohio (EPA Identification No. OHD 005 048 947) to be blended into supplemental cement kiln fuel. Approximately 5,000 to 6,000 gallons of waste paint and spent solvent was generated every 90 days from the facility's tractor painting operations.

Nonhazardous paint sludge and chips were generated in the overspray collection system of the spray booth. Paint captured by the water curtain overspray collection system was placed into two roll-off boxes located in Former CSA 2 (SWMU 3) outside the maintenance building. Paint chips originated from the physical cleaning of the spray booth's walls, floors, and components. Approximately 20 cubic yards of nonhazardous paint sludge and chips was generated and removed off site every month. The facility representatives could not provide PRC with the names of the locations where nonhazardous paint sludge and chips were disposed of. However, it is likely that the nonhazardous paint sludge and chips were disposed of in the county operated municipal landfill (South Macomb Disposal Authority Landfill) with other nonhazardous solid wastes.



Industrial wastewater from the plant was piped to the WWTP (SWMU 5). When the WWTP was unable to handle the volume of incoming wastewater, it was diverted to one of the two Former Surface Impoundments (SWMU 1). Wastewater from the former tractor facility was channeled from the phosphating and cleaning operations, the spray booth, and other miscellaneous areas of the facility through a common pipe network to two 15000-gallon wet well lift stations. Wastewater was treated by neutralizing, flocculating, clarifying, and dewatering. Oil skimming was also used in the surface impoundments and the batch treatment tanks in order to collect oil from the wastewater. Treated wastewater was discharged to the Romeo, Michigan municipal sewer via two outfalls. Waste oil collected from the wastewater was placed in tanks within the WWTP. Waste oil was collected by an unspecified local oil reclamation contractor.

## **2.4 HISTORY OF DOCUMENTED RELEASES**

This section discusses the history of documented releases to groundwater, surface water, air, and on-site soils at the facility.

Ford reported the following incidents that impacted surface water in East Pond Creek (Ford 1986a):

- May 30, 1978 -- Heavy rains caused an accidental overflow of the retention pond (AOC 4) to East Pond Creek. Two 24-inch pipes were installed to prevent a recurrence.
- December 5, 1983 -- A 3-inch valve malfunctioned on the final effluent tank and caused the Ford lagoons to overflow into the storm pond. During clean-up operations, a light oil sheen was observed from the retention pond (AOC 4) outfall to East Pond Creek. No further action was taken.
- April 4, 1984 -- Floating oil and algae blowing against the under/over weir at the outfall caused an accidental discharge that produced a light oil sheen. Containment equipment was installed at both the inlet and outlet of the storm retention pond (AOC 4).





- August 29, 1984 -- The retention pond (AOC 4) to East Pond Creek overflowed after a heavy thunderstorm. U.S. Weather Service reported 3.38 inches in less than 3 hours. This was a 50-year occurrence. No action was required.
- September 6, 1985 -- Heavy rainfall caused high water turbulence at the retention pond (AOC 4) outfall gate which caused a discharge that produced a visible oil sheen to East Pond Creek. No action was required.

Ford reported the following incident that impacted on-site soils:

- July 4, 1984 -- Michigan Department of Natural Resources Log #07-84-01-0099. Wastewater overflowed onto the ground surface from the pretreatment portion of the WWTP. The release to the on-site soils within the WWTP occurred because process equipment was not shut down for a 1-day holiday. There was no significant impact to East Pond Creek.

Ford removed approximately 1,000 cubic yards to (approximately 10 inches below ground surface) of contaminated soil from the area occupied by Former CSA 1 (SWMU 2) during its closure in July and August of 1983. According to the approved closure plan, the contaminated soil was removed and disposed of by Wayne Disposal, Inc. (EPA Identification No. MID 048 090 633) (Ford 1984a). During the closure of CSA 1 (SWMU 2), soil samples were collected in the excavation in accordance with procedures outlined in US EPA SW846, 2nd Edition, Test Methods for Evaluation of Solid Wastes, dated July 1982, and analyzed for volatile organic compounds (VOC) and metals. Based on headspace analytical procedures for volatile organics, less than one milligram per kilogram of volatile organics were indicated in the soil samples. Based on analyses of Extraction Procedure (EP) toxicity test leachate, metal concentrations were below the EPA interim drinking water standards (Ford 1984a). EPA approved the closure plans in 1984 (EPA, 1984a). No further information was found during the file review or the VSI regarding samples collected or analytical results.

In October 1983, an unspecified amount of soil beneath the waste oil tanks within the WWTP was removed and disposed of in an unspecified hazardous waste landfill. A concrete pad was constructed



in this area following the soil removal (Ford 1986a). According to available information, no soil samples were collected in the area of the waste oil tanks during the soil removal.

Ford began excavating sludge and residue from the Former Surface Impoundments (SWMU 1) in 1985. Approximately 1,250 cubic yards of material was removed from the lagoons and disposed of in a hazardous waste landfill operated by Wayne Disposal of Detroit, Michigan (MID 048 090 633). The remaining soil was sampled and analyzed per the EP toxicity test method (Ford 1984b). The sample results indicated that metals concentrations of the EP toxicity test leachate were below the EPA interim drinking water standards (Ford 1985). Following the soil removal, the units were backfilled with clean soil and monitored for release to groundwater. RCRA groundwater monitoring was conducted three times between August 1984 and August 1986. During that time, no significant increases in the concentration of indicator parameters were noted. In August 1986, Ford discontinued RCRA groundwater monitoring of the lagoons.

During modifications to the WWTP in 1985, approximately 120 cubic yards of contaminated soil was removed from beneath the treatment tanks within the WWTP. Several overflow incidents from the batch treatment tanks occurred between 1973 and 1985 and contaminated the soil. The contaminated soil was disposed of at a hazardous waste landfill operated by Wayne Disposal of Detroit, Michigan (MID 048 090 633). Random soil borings were collected in the area of removed soil, composited, and analyzed for EP toxicity (Ford 1986b). The composite sample did not yield hazardous concentrations of contaminants as determined by the EP toxicity test method.

Ford applied for a waste acceptance authorization code to dispose of xylene-contaminated soil on September 12, 1988 (Ford 1988a). The xylene-contaminated soil was removed from the Tank Farm Area (AOC 3) during retooling activities conducted in 1988 when the aboveground tanks were removed. According to Ford, the xylene-contaminated soil resulted from poor housekeeping practices in the vicinity of the xylene storage tank. Apparently the contaminated soil was disposed of off site at a hazardous waste landfill. However, information concerning sample collection, sample analysis, the amount of soil disposed of, and the extent of contamination was not available.



The following incidents resulted in releases to on-site soil and groundwater:

On December 11, 1990, and again on May 26, 1991, gasoline was released from a 10000-gallon Dynamometer Underground Storage Tank (UST) (AOC 2), near the dynamometer laboratory. Following the initial release, Ford conducted a hydrogeologic study in conjunction with remedial and corrective actions. Sixteen borings and eight monitoring wells were installed to characterize the hydrogeology and the extent of impact from the gasoline release. During the investigation, rainwater apparently entered the UST and displaced gasoline into the pipeline excavation. Abatement measures were initiated and the release was included in the investigation already underway. Soil excavation began on November 5, 1991 in the areas affected by the gasoline releases. During excavation, the impacted area was discovered to be of far greater size due to the discovery of unexpected drainage pipes and stained pea gravel. Ultimately, 6,265 cubic yards of soil was removed in the vicinity of the Dynamometer USTs (AOC 2) and disposed of off site. In 1992, additional monitoring wells were completed in seven of nine soil borings to assess impacts to the groundwater. Two recovery wells were also installed. Groundwater samples collected from the monitoring wells indicated benzene, toluene, ethylbenzene, and xylene (BTEX), and methyl tertiary butyl ether (MTBE) contamination extending 90 feet east-northeast and 160 feet south of the initial gasoline spill area. Ford plans to remediate the contaminated groundwater by a vacuum-enhanced air sparging system. The implementation of the groundwater remediation system is contingent upon the results of field tests and the approval of the MDNR (Geraghty & Miller, Inc. 1993).

## **2.5 REGULATORY HISTORY**

Ford's Notification of Hazardous Waste Activity form was submitted to EPA on August 12, 1980 (Ford 1980a). The notification listed F001, F003, F017, F018, D000, and D001 hazardous waste codes. In 1988, Ford submitted a subsequent notification form listing only D001 and D002 hazardous waste codes (Ford 1988b). However, according to facility representatives, to date the facility has not generated D002 hazardous waste. The subsequent notification followed the facility's change in status from a hazardous waste generator and treatment, storage, and disposal (TSD) facility to exclusively a hazardous waste generator.



Ford's Part A permit application submitted on November 18, 1980, includes a process design capacity of 11,600 gallons of storage in containers (SWMUs 2, 3, and 4), 40,000 gallons of storage in tanks (SWMU 5), 400,000 gallons of storage in Former Surface Impoundments (SWMU 1), and 30,000 gallons per day of treatment in Former Surface Impoundments (SWMU 1). According to the Part A permit application, the following wastes were stored in tanks and surface impoundments and treated in surface impoundments: D001, K021, D004, D006, D007, P030, D008, D009, D010, D011, F011, and F018; also F017, F018, F001, and F003 hazardous wastes were stored in containers (Ford 1980b). Ford submitted a revised Part A permit application on January 31, 1984. The revised Part A permit application listed only 550,000 gallons of F006 storage in Former Surface Impoundments (SWMU 1) and 5,000 gallons per day of F006 treatment in Former Surface Impoundments (SWMU 1) (Ford 1984c). A representative of Ford stated in an affidavit that Ford did not have operations resulting in F011 and K021 hazardous wastes (EPA 1984b). Therefore, those codes were omitted from the revised Part A permit application. The other hazardous wastes (D004, D006, D007, D008, D009, D010, D011, F017, F018, F001, and P030) included in the original Part A permit applications were included protectively and were omitted from the revised Part A permit application. The revised Part A permit application was filed following the closure of Former CSA 1 and the determination that the WWTP sludge was F006 hazardous waste.

The closure plan for Former CSA 1 (SWMU 2) was approved by the EPA on April 17, 1984 (EPA 1984a). Ford submitted certification of Former CSA 1 for closure with the closure plans on January 31, 1984 (Ford 1984a).

Ford did not submit closure plans for the other Former CSAs (SWMUs 3 and 4) included in the Part A permit application. Paint sludge and chips stored in CSA 2 (SWMU 3) were determined to be nonhazardous following the initial filing of the Part A permit application. Therefore, the facility did not submit closure plans for CSA 2 (SWMU 3). No documentation regarding the operation and closure of CSA 3 (SWMU 4) was available. It is currently inactive.

Ford submitted closure plans for the Former Surface Impoundments (SWMU 1) on August 2, 1984 (Ford 1984b). The closure plans were approved by the EPA with minor modifications on March 11, 1985 (EPA 1985). Ford submitted certification of the closure on December 13, 1985 (Ford 1985). Details of the closure are discussed in Section 2.4 of this report.





The 40,000 gallons of tank storage listed in the Part A permit application was not closed. Two 10000-gallon used oil tanks and two 10000-gallon sludge holding tanks within the WWTP (SWMU 5) were included in the Part A permit application as hazardous waste storage tanks (Ford 1986a). According to facility representatives, the RCRA exempt tanks were erroneously included in the Part A permit application. Ford did not submit a closure plan for the erroneously filed tanks. However, the facility's current RCRA status does not include any storage activities.

Prior to closure of the surface impoundments, Ford submitted a delisting petition for the F006 waste managed in the impoundments. Ford argued that the alleged F006 hazardous waste resulted from a nonelectrical plating phosphating operation and did not exhibit hazardous characteristics as determined by EP toxicity tests (Ford 1983). On November 29, 1983, the MDNR conducted a compliance status review and a preliminary technical evaluation of the facility's groundwater monitoring system. Based on the findings of the above inspection and others, the EPA filed a complaint against Ford for not complying with groundwater monitoring requirements of 40 CFR 265 Subpart F (EPA 1984c). Following the above complaint, Ford and EPA entered into a consent agreement and final order (EPA 1984d). The agreement required Ford to pay a penalty of \$38,000 and to submit applicable groundwater reports. In February 1984, Ford conducted a hydrogeologic study and installed five groundwater monitoring wells around the surface impoundments. The groundwater monitoring wells were sampled three times between August 1984 and August 1986. After the final closure of the surface impoundments was completed, and no statistically significant increases in RCRA indicator parameters were noted in samples from the groundwater monitoring wells, Ford discontinued monitoring the groundwater (Ford 1986c). On December 2, 1986, the EPA published an interpretive rule in the Federal Register that excluded phosphating from the F006 listing. Based on that interpretation, the petition Ford filed for delisting was nullified (EPA, 1986). Ford retroactively withdrew its Part A permit application following the exclusion of phosphating sludge from the F006 listing (Ford 1987). In 1988, the MDNR recognized the former surface impoundments as solid waste management units that handled only nonhazardous waste phosphating sludge (MDNR 1988).

The MDNR conducted several hazardous waste inspections at the Ford facility after the facility filed its Part A permit application. Between 1982 and 1985, six interim status inspections were conducted by the MDNR. In 1986, the Ford facility was inspected for compliance with hazardous waste



generator requirements, following its closure as a TSD facility, MDNR noted several violations of state and federal hazardous waste handling regulations during the interim status inspections.

Violations cited after the interim status inspections include the following: failure to maintain adequate training records, failure to maintain an operating record, failure to maintain an inspection log, failure to handle F006 sludge as hazardous waste, failure to maintain closed containers of hazardous waste, and failure to implement a groundwater monitoring system (MDNR 1982, 1983, and 1984). In 1986, MDNR considered the facility in compliance with applicable RCRA requirements (MDNR 1986).

The Ford facility operated with several air permits for tractor assembly and painting operations that were conducted between 1973 and 1988. However, many of the original air permits were closed out when the plant was retooled. Currently, the facility is operated under five process air permits revised from existing permits. According to the facility representatives, the permits include oil coolant areas 205-87, 205-87A, and 205-87B and oil curing areas 841-90 and 883-92. According to the facility representative, no violations or complaints have been filed regarding the facility's permitted air units.

Ford discharges noncontact cooling water from the WWTP and the plant to the Village of Romeo's POTW. Wastewater enters the POTW system at outfalls 001 and 002 along the sanitary sewer line running beneath 32 Mile Road in front of the facility. The discharge permit requires Ford to monitor the wastewater daily for oil and grease, pH, phosphorous, and metals. According to the facility representatives, storm water from an on-site Retention Pond (AOC 4) discharges to East Pond Creek under National Pollution Discharge Elimination System (NPDES) Permit No. MI 0045179003. No record of the number of times the permit was exceeded was noted during the records review or during the VSI.

Two 15000-gallon USTs were removed from the area of the utility building in 1989 (AOC 1). The facility representatives could not provide PRC with any information other than the approximate date of their removal.

The Former Paint Kitchen Sump (SWMU 6) was removed in 1988 during retooling of the facility. The closure was not conducted according to RCRA requirements, therefore, no samples were collected from the excavation. According to the facility representative, no contamination was



discovered when the tank was removed. However, no analytical records supporting the closure were noted during the file review nor were any made available during the VSI.

## **2.6 ENVIRONMENTAL SETTING**

This section describes the climate; flood plain and surface water; geology and soils; and groundwater in the vicinity of the facility.

### **2.6.1 Climate**

The climate in Macomb County is continental. The average temperatures range from a high of 83.1 °F in July to a low of 16.1 °F in January. The average daily temperature is 48.5 °F (NOAA 1989).

The average annual precipitation for the county is 30 inches. The mean annual lake evaporation for the area is about 30 inches (USDC 1968). The 1-year 24-hour maximum rainfall is about 2 inches (USDC 1963). The prevailing wind in the area is from the southwest and has an average wind speed of 10.3 miles per hour (NOAA 1989).

### **2.6.2 Flood Plain and Surface Water**

The nearest surface water body is East Pond Creek. East Pond Creek flows across the northeast corner of Ford's property. The northeastern corner of the facility is located within the 100-year flood plain of East Pond Creek. The Clinton River is located approximately 8 miles south of the Ford facility.

Storm water runoff from the north side of the facility enters the Retention Pond (AOC 4) before being discharged to East Pond Creek. Storm water runoff from the remainder of the facility enters the Village of Romeo's Storm Water Collection System along 32-mile Road. East Pond Creek ultimately discharges to the Clinton River.



### 2.6.3

### Geology and Soils

The topography to the east of Romeo is relatively flat near the Ford plant, but has more rolling hills to the west. Elevations range from approximately 950 feet above mean sea level (msl) within the highlands west of Romeo to about 700 feet msl along the Clinton River which is located to the south of the Ford plant (Keck 1984a).

A large end moraine trends roughly northeast-southwest immediately to the west of the Village of Romeo. This extensive end moraine, known as the Birmingham Moraine, distinctly separates the ice sheet deposits from lake bed (lacustrine) soils to the east of Romeo. Scattered within the morainal complex lie deposits of permeable outwash and till.

The Ford plant was constructed on glacial lake bed deposits located east of Romeo. The topography immediately to the east of Romeo is relatively flat, reflecting a lake bed environment. The land slopes gently to the east toward the main body of the ancestral lake. The lake resulted in the deposit of a substantial thickness of lacustrine clays over the pre-existing glacial sediments.

As the lake retreated, the gradual recession of the beach line left a relatively thin and discontinuous cover of beach sands over the lake clays. Occasionally, recession of the lake would temporarily halt or slacken at which time more extensive beach deposits would form. Today, these old beach lines are expressed as narrow sand ridges paralleling the old shoreline.

Total thickness of the glacial mantle averages about 200 feet. The drift rests upon the pre-existing bedrock surface which consists of Coldwater shale occurring at an elevation of about 700 feet msl. The coldwater shale is not considered to be a usable aquifer due to very low permeability although occasional strata of sandstone may support limited supplies (Keck 1984a).

Based on soil boring logs generated by Geraghty & Miller, Inc., the site geology in the area of AOC 2 is generally characterized by 4 to 5 feet of brown fill sand underlain by gray, fine- to medium-grained silty sand from approximately 5 feet below ground surface (bgs) to at least 25 feet bgs. The silt content of the silty sand varied horizontally. The total thickness of the sand unit was not penetrated during drilling (Geraghty & Miller, Inc. 1993).





#### 2.6.4 Groundwater

Due to the impermeable nature of the bedrock, more than 90 percent of area water wells tap drift aquifers. Most of the wells in the vicinity are domestic wells of limited yield (Keck 1984a). However, some higher capacity municipal and industrial wells do exist in the area. The Ford plant obtains water through the City of Detroit water system.

The Village of Romeo is the largest user of groundwater in the area with an average daily demand of approximately 600,000 gallons per day. The municipal wells located northwest of the facility are installed within the outwash deposits trapped between the end moraines. These sediments do not extend eastward to the Ford plant site. As a result, groundwater availability to the east of Romeo is generally poor (Keck 1984a).

Groundwater beneath the site occurs in an apparently unconfined condition between approximately 5.5 to 6.5 feet below ground surface (bgs). Static water-level measurements collected from the monitor wells indicate that groundwater flow is to the east. Based on a review of Geraghty & Miller static water-level measurements, the easterly groundwater flow direction has been consistent from February 1991 through October 1992 and does not appear to be significantly altered by seasonal fluctuations (<2.0 feet).

On July 28, 1992, Geraghty & Miller performed an aquifer drawdown test in Monitor Well MW-10 to approximate the hydraulic characteristics of the saturated silty sand unit in the area of the Dynamometer USTs (AOC 2). Based on Geraghty & Miller interpretations of the data collected during the drawdown test, the sediments in the vicinity of the screened portion of Monitor Well MW-10 appear to have an estimated hydraulic conductivity of approximately  $1.0 \times 10^{-3}$  feet per minute (ft/min).

The hydraulic conductivity estimate for Monitor Well MW-10 is consistent with the hydraulic conductivity estimate of  $3.1 \times 10^{-3}$  ft/min obtained from Monitor Well MW-5A in the original Phase I Hydrogeologic Investigation. Although these hydraulic conductivity values are within the acceptable range for silty sands, Geraghty & Miller believes the values, due to their limited areal coverage, are not representative of the entire study area (Geraghty & Miller, Inc. 1993).



Based on the measured static water-level measurements, the shallow horizontal hydraulic gradient between Monitor Wells MW-1 and MW-11 was approximately 0.0009 ft/ft to the east on July 28, 1992, and approximately 0.0005 ft/ft to the east on October 6, 1992.

The following is based on the findings of the hydrogeologic study and information obtained from four monitoring wells (MW-1 through MW-4) installed around the surface impoundments by Keck in 1984.

The average permeability of the clay layer encountered near the ground surface in the area of the Former Surface Impoundments (SWMU 1) as determined from soil boring samples is  $4.72 \times 10^{-4}$  ft/min. However, each boring had at least one interval within this horizon displaying a permeability of less than  $2.36 \times 10^{-6}$  ft/min which should control vertical flow through the clays (Keck 1984b).

The sand beneath the clay is of much greater permeability. The average vertical permeability of these sands as determined from all the samples from this interval is  $4.55 \times 10^{-3}$  ft/min. The greatest measured hydraulic conductivity was  $4.7 \times 10^{-2}$  ft/min.

Potentiometric surface maps show that groundwater within these sands flows to the east-southeast, rather than to the southeast as previously suspected, displaying a hydraulic gradient of 0.00736 ft/ft or 38.9 feet per mile (Keck 1984b).

The Village of Romeo also has wells installed at their sewage disposal facilities located approximately 1.5 miles to the southeast of the Ford facility's wastewater lagoons. Well logs describe the wells installed at the sewage disposal site. One well log indicates that 15 feet of beach sand overlies 26 feet of clay. The well was completed within a horizon of sand and gravel underlying the till. Another well log is similar except that the clay is described as "dirty water gravel." Several other local well logs show substantial clay thicknesses at or close to the surface (Keck 1984a).



## 2.7

## RECEPTORS

The Ford facility occupies approximately 300 acres in a predominantly mixed-use agricultural and residential rural setting. The Village of Romeo, Michigan lies approximately 1 mile to the west of the Ford facility. Romeo has a population of approximately 2,000.

The facility is bordered on the north by farmland, on the west by residential areas, on the south by a golf course and farmland, and on the east by farmland. Access to the facility is controlled by security guards at all gates and doors 24 hours per day, 7 days per week.

The nearest surface water body, East Pond Creek, crosses the northeast corner of the facility and is used for recreational purposes.

According to a hydrogeological investigation conducted by a consultant to Ford, groundwater is exploited in the area of the Ford facility for municipal, agricultural, and private water supply (Keck 1984a). The Village of Romeo operates a municipal well field approximately 5 miles northwest of the Ford facility. Several residences along 32-Mile Road use private wells.

The nearest downgradient private well is approximately 1,000 feet east of the Ford facility (Keck 1984b).

Several wetland areas are located within a 2-mile radius of the facility (USDI 1978). The wetland areas lie along East Pond Creek and are typically described as palustrine ecological systems comprised of emergent scrub and shrub classes (USDI 1978).



### **3.0 SOLID WASTE MANAGEMENT UNITS**

This section describes the 11 SWMUs identified during the PA/VSI. The following information is presented for each SWMU: description of the unit, dates of operation, wastes managed, release controls, history of documented releases, and PRC's observations. Figure 2 shows the SWMU locations.

#### **SWMU 1**

#### **Former Surface Impoundments**

**Unit Description:** SWMU 1 contains two closed surface impoundments, the east and west lagoons, that were previously used in conjunction with the WWTP. According to the closure plan, The east lagoon was roughly triangular in shape and approximately 130 feet by 80 feet by 150 feet by 20 feet deep. The west lagoon was 150 feet by 60 feet by 10 feet deep and rectangular in shape. Both lagoons were unlined.

**Date of Startup:** The lagoons were constructed to receive wastewaters from the Romeo Tractor Plant in the early 1973.

**Date of Closure:** The lagoons were RCRA closed by Ford in 1985.

**Wastes Managed:** The lagoons received untreated oily industrial wastewater and wastewater treatment sludge from the Romeo Tractor Plants phosphating and painting line. The phosphating wastewater treatment sludge was considered an F006 waste until it was delisted in 1986.

**Release Controls:** The unit had no known release controls.

**History of Documented Releases:** On December 5, 1983, an equipment malfunction caused the lagoons to overflow. This resulted in a noticeable sheen at the outfall to East





Pond Creek. According to Ford, the groundwater monitoring system operated from 1984 to 1986 indicated no impacts to groundwater.

**Observations:** SWMU 1 is closed. The area is filled, regraded, and grassed over (see Photograph No. 1).

**SWMU 2                      Former CSA 1**

**Unit Description:** SWMU 2 was a 100-foot by 150-foot area along the north outside wall of the main facility building. The unit contained drums of hazardous waste. It is believed the area was unpaved.

**Date of Startup:** SWMU 2 was used from the early 1973 until its closure in 1984.

**Date of Closure:** According to the facility representatives, this unit was certified RCRA closed in 1984. However, although the closure plan was approved by EPA, no record of EPA or MDNR closure certification was located.

**Wastes Managed:** This unit managed drums of ignitable waste paint and spent paint solvent (D001 and F003) generated in the paint booths and Paint Kitchen operations.

**Release Controls:** It is unknown if this unit had release controls.

**History of Documented Releases:** During closure activities, approximately 1,000 cubic yards of contaminated soil was removed from the area of Former CSA 1. Soil samples were collected and analyzed for organic and inorganic contaminants during the closure. According to Ford, samples collected from the excavated area did not contain significant concentrations of constituents of concern.



**Observations:** The former area of SWMU 2 is now occupied by a multi-bay truck dock. The area is paved over with concrete (see Photograph No. 2).

**SWMU 3** **Former CSA 2**

**Unit Description:** Former CSA 2 was a 20-foot by 70-foot area located west of the former tire storage area as indicated in the original Part A permit application. Two roll-off boxes and two trash compactors were used to contain paint sludge and refuse in Former CSA 2. The area was underlain by concrete pavement. Former CSA 2 is currently inactive.

**Date of Startup:** SWMU 3 was used from the early 1973 until the tractor plant closed in 1988.

**Date of Closure:** SWMU 3 was included on the original Part A permit application in 1980. No RCRA closure activities were performed in conjunction with the removal of the unit from the facility's Revised Part A permit application submitted in 1984. The facility ceased using SWMU 3 for paint sludge and refuse storage in 1988.

**Wastes Managed:** The unit handled nonhazardous waste paint sludge and paint chips from the water overspray curtains and process cleaning operations associated with the spray booths. The unit also handled miscellaneous wood and paper refuse and floor sweepings.

**Release Controls:** Materials were contained in steel roll-off boxes and compactors. The boxes and compactors sat directly on concrete pavement in the area of SWMU 3.

**History of Documented Releases:** No releases from this unit have been documented.



**Observations:** The unit area is currently used for parking and maintenance storage. The concrete pavement appeared intact, however, some weathering and cracking was noted (see Photograph No. 3).

**SWMU 4** **Former CSA 3**

**Unit Description:** SWMU 4 was indicated in the original Part A permit application as a drum storage area measuring 180 feet by 50 feet located along the east side of the building near the northeast corner of the building. No other information describing the area was available.

**Date of Startup:** This unit was identified in the facility Part A permit application. However, the unit may have been used prior to the submittal of the Part A permit application.

**Date of Closure:** The unit was not discussed in the closure plan submitted for container storage. However, the Former CSA 3 area was removed from the facility's revised Part A permit application filed in 1984. The facility may have discontinued using Former CSA 3 at the same time Former CSA 1 was closed in 1983.

**Wastes Managed:** The facility representatives had no recollection of the types of wastes handled in SWMU 4.

**Release Controls:** This unit had no known release controls.

**History of Documented Releases:** No releases from this unit have been documented.

**Observations:** No wastes or indications of releases were noted during the VSI. The area currently contains a landscaped walkway and picnic table (see Photograph No. 4).



**SWMU 5****WWTP**

**Unit Description:** The WWTP occupies approximately 2 acres of land northeast of the main facility building. The WWTP contains 15 aboveground tanks surrounded by a 6-foot-high concrete dike. Wastewater from the facility is pumped from a lift station located adjacent to the northeast corner of the facility building. The WWTP primarily functions as an oil reclamation unit consisting of oil and water separators, oil cracking units, and storage tanks. Prior to 1988, the WWTP primarily treated wastewaters from the phosphating and painting lines associated with the tractor manufacturing operations.

**Date of Startup:** The original WWTP was constructed in 1973.

**Date of Closure:** The unit is active.

**Wastes Managed:** Nonhazardous industrial wastewater from the facility containing oil and cooling fluids are treated in the WWTP. The original WWTP treated nonhazardous wastewaters from phosphating and painting operations. Prior to 1986, the wastewater treatment sludge generated in the WWTP was listed as F006 waste.

**Release Controls:** The WWTP area is contained within a 6-foot-high concrete dike. The dike was constructed when the plant was modified in 1985. Prior to 1985, release controls consisted of overflow gauges and volume controls. However, the ground surface within the WWTP was vulnerable to releases.

**History of Documented Releases:** In 1984, wastewater overflowed from process equipment to the ground surface within the WWTP. The facility determined there was no significant impact to East Pond Creek. No further information





concerning the release was available. In October 1983, soil was removed beneath the waste oil tanks and disposed of off site. During modifications in 1985, 120 cubic yards of contaminated soil was removed from the WWTP and disposed of off site.

**Observations:** During the VSI, the unit contained an undetermined amount of wastewater and waste oil. PRC noted no evidence of release (see Photographs No. 5, 6, and 7).

**SWMU 6                      Former Paint Kitchen Sump**

**Unit Description:** SWMU 6 contained a 280-gallon, steel UST used to collect spills from the paint mix room. SWMU 6 was located outside along the west wall of the facility building.

**Date of Startup:** No documentation of installation of the tank was available. However, it is assumed that the tank was installed when the facility was constructed in 1973.

**Date of Closure:** The UST was removed in 1988 when the coolant pit was constructed.

**Wastes Managed:** The unit periodically received spilled paint from the mix room that was listed (F003) and characterized as ignitable (D001).

**Release Controls:** The UST had no known release controls.

**History of Documented Releases:** No releases from this unit have been documented. According to a facility representative, there was no evidence of leakage when the tank was removed.



**Observations:** Ford has built over the unit and the area now houses a coolant collection system. PRC noted no signs of release in the area of SWMU 6 (see Photograph No. 8).

**SWMU 7** **90-Day CSA**

**Unit Description:** SWMU 7 is a 73 by 32 foot curbed concrete area used to accumulate drummed hazardous and nonhazardous wastes for less than 90 days. The unit area is surrounded by a 6-foot high chain-link fence and is covered by a corrugated steel roof.

**Date of Startup:** The unit was installed when the former drum container storage area (SWMU 2) was closed in 1983.

**Date of Closure:** This unit is active.

**Wastes Managed:** Currently, the unit manages ignitable waste diesel fuel and gasoline (D001), and waste antifreeze (D008) from the engine testing dynamometer lab. The unit previously managed hazardous waste paint and spent solvent (D001 and F003).

**Release Controls:** The unit is constructed of sound concrete, bermed on all sides by a 12-inch-high concrete berm. The floor drains within the unit lead to shallow dry sumps capable of collecting potential spills.

**History of Documented Releases:** No releases from this unit have been documented.

**Observations:** PRC noted two 55-gallon drums of waste gasoline (D001) in the unit at the time of the inspection. PRC did not note any signs of release (see Photograph No. 9).



**SWMU 8****Grinding Sludge Hoppers**

**Unit Description:** Two grinding sludge hoppers are located within the facility. The hoppers collect sludge from the coolant recovery units. One is located next to the engine assembly section of the facility and the other is adjacent to the receiving area near the Former Paint Kitchen Sump (SWMU 6). The hopper near the engine assembly has an approximately 1.5- cubic-yard capacity. The hopper near the receiving area has an approximately 20-cubic-yard capacity.

**Date of Startup:** The coolant recovery systems and associated sludge collection hoppers were installed when the facility was retooled in 1988.

**Date of Closure:** The units are currently active.

**Wastes Managed:** SWMU 8 manages nonhazardous grinding sludge separated from coolant in the coolant recovery unit. The coolant is collected with a network of channels from grinding machines throughout the facility.

**Release Controls:** The hoppers are constructed of steel and are located within the facility on a sound concrete floor. The hopper in the receiving area is surrounded by a concrete dike.

**History of Documented Releases:** No releases from this unit have been documented.

**Observations:** The hopper in the receiving area contained approximately 15 cubic yards of grinding sludge. The engine assembly hopper contained an undetermined amount of grinding sludge. PRC noted no evidence of release (see Photographs No. 10 and 11).



**SWMU 9****Metal Chip Hoppers**

**Unit Description:** Two hoppers are used to collect metal chips in the facility. One 1.5-cubic-yard hopper is located near the engine assembly area and the other, a 20-cubic-yard roll-off box, is in the receiving area located in the west end of the building. Both hoppers are constructed of steel.

**Date of Startup:** The chip recovery system was installed when the facility was retooled in 1988.

**Date of Closure:** This unit is active.

**Wastes Managed:** Nonhazardous oily metal chips from the coolant recovery units are accumulated in SWMU 9.

**Release Controls:** The unit hoppers are constructed of steel and are located within the facility on a sound concrete floor.

**History of Documented Releases:** No releases from this unit have been documented.

**Observations:** An undetermined amount of metal chips were accumulating in the hoppers during the VSI. PRC noted no signs of release (see Photographs No. 12 and 13).

**SWMU 10****Oil Garage**

**Unit Description:** SWMU 10 is located adjacent to the dynamometer lab in the northwest end of the facility. The area is enclosed.

**Date of Startup:** This unit began operating when the facility was retooled in 1988.





<b>Date of Closure:</b>	This unit is active.
<b>Wastes Managed:</b>	SWMU 10 is used to accumulate drums of waste gasoline (D001), waste diesel fuel (D001), and spent waste antifreeze (D008).
<b>Release Controls:</b>	SWMU 10 is located indoors on a sound concrete floor. Drums of waste are kept in spill pans on skids.
<b>History of Documented Releases:</b>	No releases from this unit have been documented.
<b>Observations:</b>	PRC noted four drums of waste gasoline and diesel fuel oil along with one drum of waste antifreeze accumulating in SWMU 10 during the VSI. PRC noted no signs of release (see Photographs No. 14 and 15).
<b>SWMU 11</b>	<b>Shipping area</b>
<b>Unit Description:</b>	SWMU 11 is located in the returnable oil container return area in the west end of the building. The area is indoors on a sound concrete floor.
<b>Date of Startup:</b>	This unit began operating after the facility was retooled in 1988.
<b>Date of Closure:</b>	This unit is active.
<b>Wastes Managed:</b>	SWMU 11 is used to accumulate drums of nonhazardous oil filters.
<b>Release Controls:</b>	The oil filters are contained in sound drums kept on wood pallets. The area of SWMU 11 is underlain by a sound concrete floor.
<b>History of Documented Releases:</b>	No releases from this unit have been documented.



**Observations:**

PRC noted three 55-gallon drums of nonhazardous oil filters accumulating in SWMU 11 during the VSI. PRC noted no signs of release (see Photograph No. 16).



## **4.0 AREAS OF CONCERN**

PRC identified four AOCs during the PA/VSI. These AOCs are discussed below; their locations are shown in Figure 2.

### **AOC 1      Utility Building USTs**

Two 15000-gallon USTs located near the utility building were removed in 1989. The tanks contained gasoline and diesel fuel. The facility representative informed PRC that no information concerning removal of the tanks was available. However, according to MDNR UST regulations, the facility should have documented removal of the tanks. Documentation should include sample locations and results from the excavation. This information should be submitted to appropriate MDNR agencies (see Photograph No. 17).

### **AOC 2      Dynamometer USTs**

Two 10000-gallon gasoline USTs are located outside the facility near the dynamometer lab. In 1990, one of the two 10000-gallon tanks leaked from a return line. The release apparently traveled the pipeline connecting the tank and the dynamometer lab which contaminated an extensive area of soil. The area is currently undergoing remediation studies through Geraghty & Miller, Inc. A large area of affected soils has been removed and disposed of off site. Several monitoring wells were installed to assess the extent of impact to the groundwater. Pending discussions with MDNR, Ford plans on implementing a groundwater sparging system to remove contaminants from the groundwater (see Photograph No. 18). Further discussion of this area is presented in Section 2.4, History of Documented Releases.

### **AOC 3      Former Tank Farm**

A former aboveground tank farm for xylene storage was located south of the southwest corner of the facility building. During retooling operations in 1988, the



aboveground tanks were removed and xylene-contaminated soil was removed from the former tank farm area and disposed of off site. According to the facility representative, no information was available concerning the volume of soil removed or the numbers and locations of samples collected to determine the extent of contamination (see Photograph No. 19). Further discussion of this area is presented in Section 2.4, History of Documented Releases.

#### **AOC 4**

##### **Retention Pond**

Ford operates an approximately 2-acre retention pond to collect storm water runoff from the facility grounds. The retention pond is unlined and is an unknown depth. In the past, several releases from the WWTP (SWMU 5) and the Former Surface Impoundments (SWMU 1) to the retention pond were recorded. The retention pond discharges through a weir directly to East Pond Creek. On several occasions between 1983 and 1985, an oil sheen was visible on the surface of the water discharging from the retention pond to East Pond Creek. According to the release reports, attempts were made to collect oil released to the retention pond. However, PRC noted no records of any other remedial activities regarding releases from the WWTP (SWMU 5) and the Former Surface Impoundments (SWMU 1) to the retention pond (see Photograph No. 20). Further discussion of this area is presented in Section 2.4, History of Documented Releases.





## 5.0 CONCLUSIONS AND RECOMMENDATIONS

The PA/VSI identified 11 SWMUs and 4 AOCs at the Ford facility. Background information on the facility's location; operations; waste generating processes and waste management practices; history of documented releases; regulatory history; environmental setting; and receptors is presented in Section 2.0. SWMU-specific information, such as the unit's description, dates of operation, wastes managed, release controls, history of documented releases, and observed condition, is presented in Section 3.0. AOCs are discussed in Section 4.0. Following are PRC's conclusions and recommendations for each SWMU and AOC. Table 3, at the end of this section, summarizes the SWMUs and AOCs at the facility and the recommended further actions.

### SWMU 1 Former Surface Impoundments

**Conclusions:** The lagoons received untreated oily industrial wastewater and WWTP sludge from 1973 until 1984. The lagoons were excavated, regraded, and certified closed in 1985. Prior to RCRA closure, a RCRA groundwater monitoring system was installed around the lagoons. During its operation between 1984 and 1986, no statistically significant concentrations of indicator parameters were identified in samples collected from the groundwater monitoring system. The potential for release to environmental media is summarized below.

Groundwater, surface water, air, and on-site soils: The potential for release is low. SWMU 1 was certified closed following groundwater sampling and waste excavating. Samples collected during the unit's closure did not indicate any residual contamination in the area of SWMU 1 from the former lagoons. Following the unit's RCRA closure as a hazardous waste unit, the EPA decided to exclude Ford's WWTP sludge from hazardous waste listing.

**Recommendations:** PRC recommends no further action for this SWMU at this time.

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**SWMU 2****Former CSA 1****Conclusions:**

Former CSA 1 was an area located outside along the north wall of the facility. Drummed paint wastes and spent solvents were stored in Former CSA 1 until its RCRA closure in 1983. The potential for release to environmental media is summarized below.

Groundwater, surface water, air, and on-site soils: The potential for release is low. The area was closed and remediated in 1983. Soil was removed to a depth of 10 inches across the area of Former CSA 1 during closure. Sample results indicated that no residual contamination existed from the removed soil. The area is currently occupied by a concrete truck dock.

**Recommendations:**

PRC recommends no further action for this SWMU at this time.

**SWMU 3****Former CSA 2****Conclusions:**

Former CSA 2 was listed as a hazardous waste storage area in the facility's Part A permit application. However, the paint sludge handled in Former CSA 2 was determined to be nonhazardous. RCRA closure for this unit was not pursued. Use of former CSA 2 was discontinued in 1988. The potential for release to environmental media is summarized below.

Groundwater, surface water, air, and on-site soils: The potential for release is low. Steel containers were used to handle waste at SWMU 3. SWMU 3 is also underlain by concrete.

**Recommendations:**

PRC recommends no further action for this SWMU at this time.

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**SWMU 4****Former CSA 3****Conclusions:**

SWMU 4 was included in the facility's 1980 Part A permit application. No documentation regarding the unit's operation or closure was available. The potential for releases to environmental media is summarized below.

Groundwater, surface water, air, and on-site soils: The potential for release is unknown. Prior waste management practices and secondary containment features of this unit are unknown.

**Recommendations:**

PRC recommends that documentation of the unit's waste management practices and closure be submitted to the MDNR.

**SWMU 5****WWTP****Conclusions:**

The WWTP was constructed in 1973 to treat oily industrial wastewater containing cleaning and phosphating wastes. The WWTP was upgraded in 1985 to handle additional volume and include oil skimming equipment. During the retooling in 1988, the WWTP was reconfigured to act as an oil reclamation unit. Several releases were reported from the WWTP before the retooling in 1988. The potential for release to environmental media is summarized below.

Groundwater, surface water, air, and on-site soils: The current potential for release is low. SWMU 5 was modified extensively in 1985 and 1988. Modifications included constructing a concrete pad within the WWTP and surrounding the WWTP with a 6-foot-high concrete dike. All the tanks in the WWTP are covered and are equipped with high level alarms.

**Recommendations:**

PRC recommends no further action for this SWMU at this time.

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**SWMU 6****Former Paint Kitchen Sump****Conclusions:**

The paint kitchen UST was equipped with an overflow tank. The overflow tank periodically received spilled paint and solvent. The paint and solvent was removed from the tank within 90 days. In 1988, the tank was removed. According to the facility representative, no contamination was discovered during the removal of the tank. However, PRC noted no documentation of closure of the tank. The potential for release to environmental media is summarized below.

Surface water and air: The potential is low. The unit was enclosed and located below grade, therefore, any potential releases would not reach air or surface water.

Groundwater and on-site soil: The potential is moderate. Without sampling results or other documentation indicating the condition of the tank at the time of removal, it is possible that leaks from the tank may have impacted on-site subsurface soil and groundwater.

**Recommendations:**

Ford should submit documentation of the tank's removal to the MDNR.

**SWMU 7****90-Day CSA****Conclusions:**

Since the closure of Former CSA 1 (SWMU 2) in 1983, SWMU 7 has been used to accumulate drums of hazardous wastes. The potential for release to environment media is summarized below.

Groundwater, surface water, air, and on-site soils: The potential is low. SWMU 7 is a covered, bermed, concrete pad that manages wastes in closed steel drums.

**Recommendations:**

PRC recommends no further action for this SWMU at this time.

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**SWMU 8****Grinding Sludge Hopper****Conclusions:**

SWMU 8 collects nonhazardous grinding sludge separated from the coolant fluid. The unit is contained inside the facility building. The potential for release to environmental media is summarized below.

Groundwater, surface water, air, and on-site soils: The potential is low. The hoppers are constructed of steel and are kept inside on a sound concrete floor.

**Recommendations:**

PRC recommends no further action for this SWMU at this time.

**SWMU 9****Metal Chips Hopper****Conclusions:**

SWMU 9 collects metal chips that are separated from the coolant fluid. The unit is located inside the facility building. The potential for release to environmental media is summarized below.

Groundwater, surface water, air, on-site soil: The potential is low. The hoppers are constructed of steel and are kept inside on a sound concrete floor.

**Recommendations:**

PRC recommends no further action for this SWMU at this time.

**SWMU 10****Oil Garage****Conclusions:**

The oil garage is used to accumulate waste antifreeze, waste diesel fuel, and waste gasoline generated in the dynamometer laboratory. The area is enclosed and underlain by a sound concrete floor. The potential for release to environmental media is summarized below.

Groundwater, surface water, air, and on-site soil: The potential is low. Wastes are contained in closed steel drums in the oil garage.

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**Recommendations:** PRC recommends no further action for this SWMU at this time.

**SWMU 11                      Shipping Area**

**Conclusions:** SWMU 11 occupies a small portion of the staging area used to store returnable oil containers. The area is indoors and located on a sound concrete floor. The potential for release to environmental media is summarized below.

Groundwater, surface water, air, and on-site soil: The potential is low. The unit is located inside the facility building on a sound concrete floor.

**Recommendations:** PRC recommends no further action for this SWMU at this time.

**AOC 1                      Utility Building USTs**

**Conclusions:** AOC 1 is defined as an area adjacent to the utility building where two 15000-gallon USTs were removed. The tanks were removed after 1989, when documentation of their removal was required. The potential for release to environmental media is summarized below.

Surface water and air: The potential is low. The area of concern is located below grade.

Groundwater and on-site soils: The potential for release is low to moderate. Without sampling results or documentation indicating the condition of the tanks at the time of removal, it is possible that leaks from the tanks may have impacted on-site subsurface soil and groundwater.

**Recommendations:** Ford should submit documentation of removal of the tanks to the MDNR.

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## AOC 2

### Dynamometer USTs

#### Conclusions:

A return line leading from two 10000-gallon gasoline USTs failed and released gasoline during 1990. During the investigation that followed, a large area of soil contamination was discovered and removed off site for disposal. Currently, the facility is monitoring groundwater in the area of the spill and proposing a pump and treat remediation technique. The potential for release to environmental media is summarized below.

Surface water and air: The potential is low. The area of contaminated soil and groundwater is located below grade.

Groundwater and on-site soils: Observed release. A release to on-site subsurface soils and groundwater was documented. Contaminated soil has been delineated and removed. Groundwater contamination is currently being studied and remedial options considered.

#### Recommendations:

The facility should continue studying groundwater remediation options to identify the most effective remedial alternative. The facility should remain in contact with the MDNR, seeking their approval of corrective actions.

## AOC 3

### Former Tank Farm

#### Conclusions:

AOC 3 is defined as an area near the southwest corner of the facility building that contained a xylene tank farm. The aboveground tanks and xylene-contaminated soil were removed from the area and disposed of off site during retooling activities. PRC noted no documents describing the soil removal and the extent of xylene contamination. The potential for release to environmental media is summarized below.

Surface water and air: The potential is low. The area was remediated during the retooling activities in 1988.

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Groundwater and on-site soils: The potential is moderate. Without sampling results or documentation of the soil removal, it is possible that residual contaminated soils exist and present a risk to groundwater.

**Recommendations:** The facility should submit information describing the removal of the contaminated soils and the extent of contamination that was remediated.

#### **AOC 4**

#### **Retention Pond**

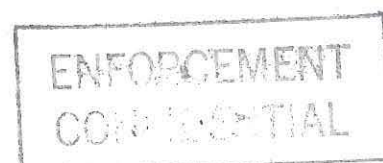
**Conclusions:** AOC 4 is an unlined storm water runoff retention pond that discharges to East Pond Creek. In the past, the pond received several releases of oil and wastewater from the WWTP (SWMU 5) and the Former Surface Impoundments (SWMU 1) and subsequently discharge some of this material to the creek. Repeated releases prior to secondary containment upgrades for the WWTP and the closure of the Former Surface Impoundments could have contaminated sediments in the retention pond. The potential for release to environmental media is summarized below.

Surface water, air, and on-site soils: The potential is low. The retention pond is currently adequately protected from releases from SWMUs 1 and 5 and resulting discharges to East Pond Creek. No releases to the retention pond and subsequent discharge to East Pond Creek have been documented since 1985, following the upgrades to secondary containment around the WWTP (SWMU 5) and the closure of the Former Surface Impoundments (SWMU 1).

Groundwater: The potential is moderate. Hazardous constituents may be contained in the retention ponds sediments may leach to the groundwater.

**Recommendations:** PRC recommends that sediment samples be collected from the bottom of the retention pond and analyzed for hazardous constituents.

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**TABLE 3**  
**SWMU AND AOC SUMMARY**

<u>SWMU</u>	<u>Dates of Operation</u>	<u>Evidence of Release</u>	<u>Recommended Further Action</u>
1. Former Surface Impoundments	1973 to 1985	Contaminated soil was removed during closure	None
2. Former CSA 1	1973 to 1983	Contaminated soil was removed during closure	None
3. Former CSA 2	1973 to 1988	None	None
4. Former CSA 3	Unknown to 1983	Unknown	Documentation of the unit's waste management practices and closure should be submitted to the MDNR.
5. WWTP	1973 to present	Contaminated soil was removed during 1985	None
6. Former Paint Kitchen Sump	1973 to 1988	Undocumented hazardous waste UST closure	Documentation of the removal of the tank should be submitted to MDNR.
7. 90-Day CSA	1983 to present	None	None
8. Grinding Sludge Hopper	1988 to present	None	None
9. Metal Chips Hopper	1988 to present	None	None
10. Oil Garage	1988 to present	None	None
11. Shipping Area	1988 to present	None	None

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**TABLE 3 (Continued)**  
**SWMU AND AOC SUMMARY**

<u>AOC</u>	<u>Dates of Operation</u>	<u>Evidence of Release</u>	<u>Recommended Further Action</u>
1. Utility Building USTs	1973 to 1989	Undocumented UST closure	Ford should submit documentation of removal of the tanks
2. Dynamometer USTs	1988 to present	Contaminated soil was removed. Groundwater remediation is being proposed	Submit groundwater remediation plans to MDNR. Begin corrective actions with the approval of MDNR.
3. Former Tank Farm	1973 to 1988	Contaminated soil was removed during retooling activities	Ford should submit information describing the contaminated soils removed and the extent of contamination.
4. Retention Pond	1973 to present	Several storms have resulted in oil discharges to East Pond Creek. Several releases from the former surface impoundments and the WWTP entered the retention pond.	Ford should collect sediment samples from the retention pond and analyze them for hazardous constituents

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**APPENDIX A**  
**VISUAL SITE INSPECTION SUMMARY AND PHOTOGRAPHS**  
(11 Pages)



## VISUAL SITE INSPECTION SUMMARY

Ford Motor Company  
Romeo Engine Plant  
701 East 32 Mile Road  
Romeo, Michigan 48065  
MID 078 400 165

**Date:** June 4, 1993

**Primary Facility Representative:** Staci Swatsenbary, Ford Motor Company (Ford)  
**Representative Telephone No.:** 313/752-8087  
**Additional Facility Representatives:** Kathy A. Waskiewicz, Ford  
Richard W. Vreeland, Ford

**Inspection Team:** Ron Baker, PRC Environmental Management, Inc. (PRC)  
Mary Freibert, PRC

**Photographer:** Ron Baker, PRC

**Weather Conditions:** Mostly cloudy, temperature ranged from 68 °F to 75 °F

**Summary of Activities:** The visual site inspection (VSI) began at 8:00 a.m. on June 4, 1993, with an introductory meeting. The inspection team explained the purpose of the VSI and the agenda for the visit. Facility representatives then discussed the facility's past and current operations, solid wastes generated, and release history. Facility representatives provided the inspection team with copies of requested documents.

The VSI tour began at 12:45 p.m. PRC inspected formerly operated and active solid waste management units (SWMU) throughout the facility. The SWMUs inspected on June 4, 1993 included Surface impoundments, Former CSA 1, Former CSA 2, Former CSA 3, WWTP, Former Paint Kitchen Sump, 90-Day CSA, Grinding Sludge Hoppers, Metal Chip Hoppers, Oil Garage, and Shipping Area.

On June 4, 1993, PRC also observed areas where releases from underground tanks were reported. These areas were designated as areas of concern (AOC) and include the Utility Building USTs, the Dynamometer USTs, the Former Tank Farm, and the Retention Pond.

The tour concluded at 2:45 p.m., after which the inspection team held an exit meeting with facility representatives. The VSI was completed and the inspection team left the facility at 3:00 p.m.





Photograph No. 1

Orientation: Northwest

Location: SWMU 1

Date: June 4, 1993

Description: The area shown contained the Former Surface Impoundments until their closure. The area was filled and regraded during the closure.



Photograph No. 2

Orientation: South

Location: SWMU 2

Date: June 4, 1993

Description: This truck bay contained Former CSA 1 until its closure in 1983.





Photograph No. 3

Orientation: North

Description: Former CSA 2 was located on the concrete area shown next to the former tire storage building.

Location: SWMU 3

Date: June 4, 1993



Photograph No. 4

Orientation: South

Description: This area was described on the Part A permit application as containing a CSA. It is now used as a break area by Ford employees.

Location: SWMU 4

Date: June 4, 1993



Photograph No. 5

Orientation: Northeast

Location: SWMU 5

Date: June 4, 1993

Description: Used oil is unloaded at the corner of the enclosed portion of the WWTP. Waste oil storage tanks are shown in the background.



Photograph No. 6

Orientation: South

Location: SWMU 5

Date: June 4, 1993

Description: The tanks on the right side of the photo are primarily dewatering and oil storage tanks. The larger tanks on the left side of the photo are used to clarify water before it is discharged to the Romeo POTW. Note the encircling concrete dike.





Photograph No. 7

Orientation: Northwest

Location: SWMU 5

Date: June 4, 1993

Description: The enclosed portion of the WWTP houses product water treatment chemicals.



Photograph No. 8

Orientation: East

Location: SWMU 6

Date: June 4, 1993

Description: The paint kitchen was located in the area now occupied by the new building addition. The paint kitchen sump was located underground in the area of the scrap metal roll-off boxes.





Photograph No. 9

Orientation: North

Description: Two drums of D001 hazardous waste accumulating in the less than 90-day CSA.  
Note seamless, bermed-concrete floor.

Location: SWMU 7

Date: June 4, 1993



Photograph No. 10

Orientation: West

Description: A large roll-off hopper near the former paint kitchen is used to collect grinding sludge.

Location: SWMU 8

Date: June 4, 1993



Photograph No. 11

Orientation: NA

Description: A smaller steel hopper is used to collect grinding sludge near the engine assembly area.

Location: SWMU 8

Date: June 4, 1993



Photograph No. 12

Orientation: South

Description: A large roll-off hopper is used to collect metal chips near the former paint kitchen.

Location: SWMU 9

Date: June 4, 1993





Photograph No. 13

Orientation: NA

Description: A smaller steel hopper is used to collect metal chips near the engine assembly area.  
Note SWMU 9 is shown in left side of photo.

Location: SWMU 9

Date: June 4, 1993



Photograph No. 14

Orientation: Southeast

Description: An empty waste antifreeze accumulation drum is shown against the south wall of the oil garage near the Dynamometer Laboratory.

Location: SWMU 10

Date: June 4, 1993



Photograph No. 17

Orientation: South

Description: The patched section of asphalt outlines the extent of the excavation created to remove two 15000-gallon gasoline USTs.

Location: AOC 1

Date: June 4, 1993



Photograph No. 18

Orientation: East

Description: The grass area and a portion of the area extending to the building were removed and disposed of off site following a gasoline release from two 10,000 gallon USTs.

Location: AOC 2

Date: June 4, 1993





Photograph No. 19

Orientation: Southeast

Location: AOC 3

Date: June 4, 1993

Description: The area shown was formerly occupied by a xylene tank farm. Contaminated soil was removed and disposed of off site from this area.



Photograph No. 20

Orientation: North

Location: AOC 4

Date: June 4, 1993

Description: The storm retention pond extends along the south bank of East Pond Creek. The outfall weir can be seen around the far edge of the retention pond. The oil boom is kept in place to skim runoff entering the retention pond.

**APPENDIX B**  
**VISUAL SITE INSPECTION FIELD NOTES**  
(27 Sheets)

June 4, 1993

(1)

4:00 - at Ford -

Started the entrance

meeting - present

Steve Watsonberg - Ford  
Lund

Prop

Addr

Tele



Kathy A. Waskiewicz, P.E.

Principal Facility  
Environmental Control Engineer  
Environmental Quality Office

Fax: 313/594-3062

Suite 608  
15201 Century Drive  
Dearborn, MI 48120  
Telephone: 313/594-7752

- facility of history -

1973 constructed tractor  
assembly - was from

from 3 plants from  
other locations -

Consolidation was 1.1 mil. sq. ft.

REB 6/4/93

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50%  
ant  
proo

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(2)

June 4, 1993

June 4, 1993 (3)

Until 1988 tractor assembly  
Tractor assembly was transferred  
to New Holland

property then transferred to  
engine production - in 1988 -  
1991 - production began  
Pinnacle Power house -  
and wastewater treatment plant,

Ford owns - 285 acres -  
118 acres under roof -

Original building is same  
as for Ford tractor - has  
been added on and  
extensive additions of  
equipment fixtures - etc.

North east and south - Farms  
and Rural - West Village of  
Bromo

- 80 imp compress to

- Current Employees 930 -  
2 shifts production -  
4.6 l.k. V8 engine -  
luxury car

24-hour security - fenced  
gated -

File 6/4/93

Waste Streams quantities?

Solvent (paint) -  
Paint sludge -  
Phosphory sludge -  
Wastewater -  
oil

Ford retains records for  
3 years only -

File 6/4/93



④ June 4, 1993

- 5-Step Wastewater phosphating line -

- New waste gen -  
next to the treatment plant -  
Volume removed is estimated

(2) drum storage areas -  
Closed

100' x 180' area - sampled  
and soil removed

100'-150' area removed and  
sampled -

Paint sludge hopper - were  
removed from Part A  
when paint sludge was  
also generated in waste-  
water treatment plant

RTH 6/8/93

June 4, 1993 ⑤

Wastewater from phosphating  
tanks / ~~was~~ systems went  
to wastewater treatment  
tanks / system -> Water  
contains <sup>also</sup> ~~is~~ dumped to  
the wastewater treatment

Wastewater treatment system  
was discharged to Village of  
Romee - treatment works based  
on industrial sewer requirements

East and West lagoons both  
received raw waste then it  
was pumped back to WWTTP  
to solve capacity problems

- 1974 - 1984

RTH 6/8/93



① June 4, 1993

Waste treatment lagoons  
RCRA closed in 1984  
monitored until 1985 -  
after 34 clean rounds of  
supls discontinued and  
monitoring - wells are  
still present

Waste oil lagoons called  
due to fact floating oil  
was skimmed from top  
and pumped to oil  
water separator -

During closure material was  
removed from lagoons  
and removed from site  
to Wayne disposal Michigan  
as F006 waste

6/4/93

RLS

June 4, 1993 ②

After closure only hazardous  
wastes generated were paint,  
solvent from gun flush, and  
possibly waste oil -

Mix room - overflow in  
paint kitchen - UST  
outside of Mix room -  
- 1988 removed tank -

emergency ~~to~~ run-off

→ tank or pit? -

done by contractor -

- 100 gallon - steel tank

sump - no contamination

Pulled UST pit for caustic

coherent pit was constructed -

40 in. waste drums

RLS

6/4/93



④ June 8, 1993

June 4, 1993 (9)

(2) tanks (gas, diesel) were pulled in 1988 - they were located by the ~~powerhouse~~ utility building - Tank farm -  
x no supply ~~project~~ was conducted?  
(Need more info or assume w/100%)

### Releases -

1977 - operator error → discharge coils caught at the POTW Romeo

1978 - fire in Pond - oil steam - No action

1983 - overflow of lagoons - clean-up - booms to absorb oil - S

1994 3 incidents all reported -  
B263 9/4/93

there was a ~~WST~~ <sup>R13</sup> WDES -

### Air Releases -

Romeo tractor -

25 - air permitted the roof  
Stacks - + more - records are all gone now -

large oil fueled boilers in powerhouse were discontinued in 1988 -

- Did convert to natural gas in ~ 86 - (Bok in c.k.)  
Boilers provided steam heat

B263 4/4/93





(1)

June 4, 1993

get copy of waste inventory -  
for current operations  
Waste Streams

Dynamometer - huz for

D2018 - maybe picked up

in vent exchanger radiator -

\* - quantities - asks on

materials being copied -

Safety Klean waste -

infrequent -

baseline - D201, Diesel

Paint - ~~D201~~ D201, D201S

equipment - materials when paint

was changed over -

misc.

- Excavation materials from

the New UST tanks.

4/4/93 BLS

(2)

June 4, 1993

Non huz Routine waste -  
oils, bags, filters, grinding  
sludge, chips, soluble oil -

- coolant system - separated

chips, grindings, coolant -

Chips and sludge are not

commingled - sell chips as

scrap

Drilled chips are collected

in large hopper -

scrap - metal from scrap

~~scrap~~ blocks, heads

contacted to Zoloff Bros.

- Grinding sludge to city

Environment for solid waste

4/4/93 JCL



(12)

June 4, 1993

and landfiling - oil filters go to same place -

Safety Klean picks up Dyn-oil - oil and gas did not exhibit

flamable

Generated and picked up in the Dyno even by Safety Klean -

WWTP - Soluble oil and waste oils - all oils from production area through production waste stream -

WWTP is actually an oil treatment facility acid cracking, decanting settling. 10,000 gal tank for waste oil -

RL BL 6/4/93

(13)

June 4, 1993

Completed piped system under facility channels water, oil, coolant, etc to a lift station at the WWTP

Wastewater from the WWTP is discharged to Village of Romeo. Now have discharge permit with Romeo -

Sampled at point near WWTP

Permit - 091  
0.1 grease  
350 gal/min by  
to POTW  
PH  
Phosph  
TPO  
Metals

Truck Compactor - pellets, paper etc

6/4/93 RL BL

C

(1)

2

(14) June 4, 1993

- New line-in-basins with wet wells -  
that the sewer dump  
to from process sewer system

(3) 15,000 gal concrete pit -

acts as lift station for  
process waste water from  
plant

(1) - 15,000 gallon is separate for storage  
for coolant that is stored

(2) for batch process water  
pits were used to collect  
wastewater from tractor operations

Pre - 1988  
same as tractor

→ NPDES - MJI 0045179 003

for storm water and non-contact  
cooling

RLH 6/4/93

June 4, 1993 (15)

Nearest surface water is  
East pond creek to  
Clinton River

Air permits - filed in

1987. Revised 1988, 1992  
to permit to install [205-87A]

7 permits covered all  
oil coolant areas [205-87A]

Revised 87  
Revisions [205-87B]

1992 2 new areas were permitted

after revision of original  
oil and cooling areas permit.

[841-90] [883-92]

All the tractor permits were closed  
per L

RLH 6/4/93



①⑥ June 4, 1993

- Air Seal Pumps, replace one of MDNR work office →

Phase II clean up -  
planning - pilot test for an air sparging system

currently drawing in area of expected area so we postponed until the dock is finished

Drawdown from pumping in area of soil removal could be influencing the area of the UST leaks.

6/9/93 JAP

June 4, 1993 ①⑦

~~The drawdown~~ - Two

1789 - last test capsules decontam. swabs 1 & 2 were installed their drawdown

is unknown.

- UST -

Tank leaked at the

pipe return -

→ According to Don -

the pumps and swabs

volumes are unknown -

1145 - lunch -

1245 - back outside facility with thick first step - over of

from paint booth -

Photo 1 - former gun clean down area looking west 6/4/93 JAP





⑬ June 4, 1993

every is keepy location in  
facility map

Photo - of eff colling's from  
[2] colling fluid tank system  
going to drain in larger Roll-off  
in right of photo is intake square

[3] ~ grinding material from machine  
looked pits

to high over in in concrete  
floors

Photo

⑭ Shipping and receiving area

- now has oil filter  
to City End

3 55-gallon drums  
looked clean -

6/4/93 ZHR

June 4, 1993 ⑮

Photo - Chip hopper chips from  
[5] various mills -

\* crushed is in circulation, filter  
trap tank contents through separate lines -

Photo

[6] - brush, sludge chamber -

20 comp - Roll-off -

4 front depression accumulates  
grinding from 3 grl containers  
in Photo [3] - drippings go

to process waste  
in area of former paint  
kitchen

Photo

[7] Paint Kitchen Sump under new  
concrete End Roll-off -

looking  
foregrounds contain soap metal

Photo 6/4/93



(2d) June 4, 1993

Photo

(8) - former <sup>1300</sup> UST - gas  
diesel - (under asphalt seal) -  
looking south =

Photo

(9) - area of former Xylene  
tank farm above ground  
soil was removed when road  
was installed - disposed of  
with soil removed from pit  
Kocher sees - (Photo 7) -  
Wagon deposit / h/o watch -  
in dates ? -

Photo - oil Gorge -

(10) - Satellite area for Dore  
engine oil -

and waste oil and filters

(11) - Nin hat

Dynamometer Gorge RAB 6/10/93

June 4, 1993

(21)

Photo

(12) New tank installation spill area

Soil removal area

Photo looking - East

soil removed section

Photo

(13) - form Sludge boxes and

compactor section -

Used to be 2 compactors

2 7 yard boxes

Three pint stumps in area of

former compactor concrete in

bad shape, cracked

Photo

(14) - dam area - (11 of 2)

in bag 74 -> C

took 10' soil off side

were disposed

accident took 2 shots of dam

6/4/93



(22)

June 4, 1993

Photo current 90:1 by CSA

(15)

- One piece concrete - to  
dipled and sloped

2 SS gallons of DDD (gas)

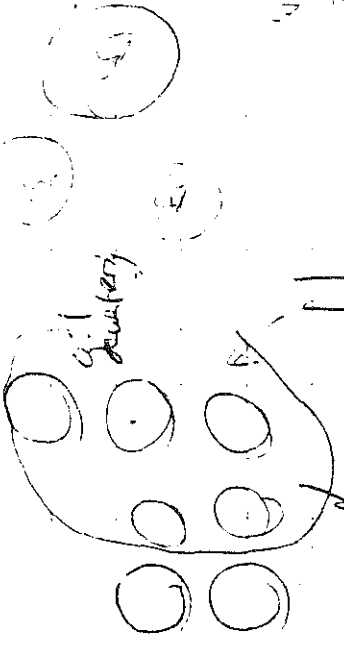
dry surps in floor

one from (circled) gas trap

Shingie

Photo

(16)



edges of -

3/13 4/4/93

left station

(23)

June 4, 1993

Photo

(17)

old Tilt-up cake pile

even that is now full

enclosed since 1983 -

old area was isolated

by concrete -

Photo

(18)

- storm water retention pond -

- broken North-east

Photos

(18-19)

- of Tanager lagoons -

Photo

(20)

Smaller  
forming hundreds waste storage

containers were

on the ground - were now

land's report - was enclosed lined

3/13 6/4/93



(24) June 4, 1993

- getting waste box - current
- map of current operations -

Final Notes

all truck wastes went to

Wynne Disposal

- Ground Soil was ~~at~~  
leachates were from Kyle  
spill area - around  
Paint Fitcher and tank  
farm U239 -  
18 cu yd - water -  
total removal -

86-89 - behavior

report 23121 Code 7

Wynne Disposal - U239 -

24 6403

June 4, 1993

(25)

Shipped to MID 048090633

"is" switched to Detroit

City water from Rome

2482-6/4/93

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(20)

6/14/93

Sunny, 52°F

8:00 AM

On-site

M. Treibert, PRC

R. Baker, PRC

Richard Vicklund, Ford

Kathy A. Wiskiewicz, Ford

Steve Stawenland, Ford

Discussing why we are doing the inspection with Ford personnel

1973 - Began Operations

1974 - Tractor Assembly

- initially small bldg.

- manufact. backhoe-front end loaders

Engt

(21)

6/14/93

welding, ~~assembly~~ cylinder holder

June 30 1988 - Stop Tractor Assembly

Engine Division - Manufacturing

Started Production in 1990

Renovation Powerhouse and

WWTV

Tractor Assembly - Painting operations

before 1973 - farmland

E - farm land

W - City of Rome (Village)

N - Farm land

S - Golf course and farm land

Engt

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(22)

6/4/93

930 people  
two 8 hr shift  
third shift - maintenance  
dept  
4.6 liter engine  
24 hr security guard,  
totally fenced  
6 foot fenced  
285 acres -  
118 acres - manufacturing  
Ford Tractor Assbly  
Waste Streamer  
- Spray Paint Booth  
- 2 Washer Spray Booths  
for Touch up at

(23)

6/4/93

the end of the assembly  
Wayne Disposal  
- Paint Sludge - Nonhazardous  
Spill Paint } Petro Chem - reclaim  
- Solvents  
- Wastewater  
- Water Oil  
- WWTU Sludge - Wayne Disposal  
Paint Solvents + Paint  
Paulino Ohio - for Reens, Ohio  
incineration / cement kiln  
WWTU - 1973 to present  
Phosphatizing line - 5 Stage Washer  
clean, phosphate, rinse water  
Wgt



(24)

6/4/93

CSA - next to WWTU  
Waste pit - for waste  
paint

waste paint and solvents -  
6,000 gal. per year

Environmental Degr  
brought a 3,000-gal  
tanker truck ~~into~~  
onto property and  
pumped out 55-  
gal drums of waste  
paint and solvent  
Stored in CSA and  
the waste pit.

2 CSAs  
1 sledge hoppers  
sage

(25)

6/4/93

2 lagoons - east and  
west

waste oil is generated  
from the cleaning  
of the metal before  
being painted

② maintenance hydraulic  
③ broken tank line

Paint Sledge hoppers - waste  
① Paint filter  
② Paint sumps/sledge  
from Paint booth

Water from paint booth  
to WWTU

sage



(26)

6/4/93

② Phosphating Line -  
Water to WWTV

Stormwater Pond - Extension  
Pond - has NPDES -  
includes non contact  
cooling water  
- 1" outfall

WWTV ~~to~~ discharges  
to faulting sewer

1973 to 1984

lagoon discharged  
to Wastewater

to Waste Oil

Closed in 1984

*[Signature]*

(27)

6/4/93

Kathy Wachiewicz  
stated that the state  
(MNR) made the rule  
that the wastewater  
sludge (E006) was never  
put in lagoons and  
it was not hazardous

GW ~~not~~ monitoring  
not necessary by MNR  
letter - discontinued  
in 1986.

GW monitoring done  
by a Consent Order

WWTV - capacity 1973 to 1974  
150,000 gallons per day

*[Signature]*





(28)

6/4/93

Soil removed from lagoons  
sent to Wayne Disposal  
in Honolulu HI  
Disposed of as F006

1988 - waste pit removed  
where paints were  
mixed  
used for secondary  
containment

100-gal UST (sump)

Single wall - black  
iron

Wulbrige - took out  
all USTs and switched  
over

2 15k USTs removed 1989

WJH

(29)

6/4/93

USTs next to Utility Bldg

1 - diesel  $\rightarrow$  15k

1 - gasoline  $\rightarrow$  15k

West Tank Farm

Ford has no documentation  
concerning the fact that  
the soil was clean when  
they were removed in

1989 - any sampling was

conducted - Not known

for Ford, stated that  
used to put air pressure on  
USTs for tightness testing.

WJH



(34)

6/4/93

3-4 ~~200~~ 8K per month  
of waste oil  
to Edwards Oil

10K ~~per~~ AST

Piped and pumped to  
lift area near WWTU  
where it is pumped  
to WWTU

Mainly under floor

From WWTU to ~~city~~ Village

of Komeo WWTU

Coolants and Hydraulic Oils  
sent to WWTU

Sanitary Lines separate

from WWTU Lines to  
City of Komeo Village of Komeo

~~not~~

(35)

6/14/93

ERT - Auburn Hills - Samples  
for discharging water  
from WWTU to WWTU  
0-91 - Permit No.

Discharge  
350 gal per minute

No Industrial wells on site  
Water supplies from ~~city~~  
City of Detroit

Lift Stations

WWTU Sludge - City of Environ-

mental - ~~well~~ well - Concrete  
10 - 15 K

- underground fire lines

3 Wet Wells - 2 are  
connected and 3rd is separate

~~not~~

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(36)

6/14/93

wet wells → lift station →  
transfer station

East Pond Creek - east  
of the facility - closest  
surface water  
N. Bradwell Clinton River  
which flows to  
Detroit River

Ron Baker has info  
from file review on  
ground water wells

Cement air permits

1987 - 0.1 Mpd - whole  
facility  
wells

(37)

6/14/93

1989 - 1987 Revised  
1991 - install of A1 Block &  
A1 Cylinder Block  
1992 - Four  
high performance  
cranks - still  
under construction

Air  
3 permits

1987 - facility (Revised 1989)  
1991 - A1 Block & A1  
Cylinder Block

1992 - high performance Crank  
# 20587A (revised)

# 20587 - original

# 84-90 - A1 block

883-92 - High Performance Crank

20587B - Chan-Shaft Revision



(38)

6/4/93

No violations of Air  
toxicity office is  
the compliance of  
air

### Phase II

2 10k - 1st bagher  
- elbow back

At Sparging for ground  
water for remediation

Pilot Test - has been  
put off

groundwater flows  
west to east

For dewatering sent  
to retention pond

WJF

(39)

6/4/93

NPDES includes ground  
water

6,400 yd<sup>3</sup> contaminated  
soil removed

P. ground extended to 14 ft  
Water table about at  
6 ft

For dewatering back area -  
the rate ??

11:50<sup>AM</sup> Break for lunch

12:45<sup>PM</sup> Back from lunch

WJF





(4)

Photo

1

6/4/93

Facility Tour 1:00 PM

West - Former

Paint Booth area

55-gallon SAA

- solvent - clean

area

(2) Chips (Metal) container and Oil Water Separator

Direction East

(3) Grinding Sledge Container 3 cubic yds

Direction Southwest

(4) Shipping Receiving Staging Area

3- 55 gallon drums of used oil filters

WHT

6/4/93

Photo

(5) South

20-cubic yard container metal chip

Ford has about

20 coolant septones through out facility

4,000 gallons

(6) Grinding Sledge

20-cubic-yard container

Direction Northwest

100-gallon tank for 2<sup>nd</sup> container

pipe lines running from room to assembly lines

(7) (8) 20-cubic yard container

metal, plastic-recycling out 5, do old paint booth east & southeast

WHT

(41)

Q

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U

(42)

Photo

6/14/93

(9) Tank Farm - UST

2 15 K

South

(10) 4 AST Xylene contamination

2 20 K

2 10 K

Southeast

(11)

Waste Antifreeze (DROD)  
55 gal drum Southeast

(12) Waste Engine Oil (Crabcase) 4 55 gal.  
Used oil filters 155  
1 55 gal product gal  
Northeast

*[Signature]*

(43)

6/14/93

Photo

(13) East - 2 New UST  
10 K - contaminated  
soil removed

(14) 2 compactors - 20 cubic yd  
5 hedge containers -  
20 yd containers  
North East  
Checked concrete

(15) CSA - Part A  
Expanded from A to C  
at Unloading dock  
Direction South

(16) Current CSA  
1) Door  
2) Door, Duct

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(49)

6/14/93

CSA - less than 90 day  
2 55 gal drums  
has dump  
6" beam (concrete)  
slopes down at 30°  
Ange

direction North

(17) Northwest west  
LWTV

(18)

~~Southwest east~~ Southwest  
WWTU - where  
20 cubic yard concrete  
500 lb  
was enclosed  
was covered and  
on concrete

(45)

6/14/93

(19) Extension on Pond  
direction North

(20) Lagoona - Northwest  
Part A  
PKA closed 1994

Gas Growing  
Dirt road

(22) Southeast  
Lagoona area

(23) CSA - Part A - Former  
fence in area  
removed soil  
Not knowing concrete  
or asphalt  
Mey

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(46)

6/4/93

3:00 PM

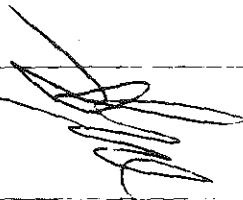
Facility tour  
included

3:05 PM

Closing Meeting

3:45 PM

off site







Facility Management Plan  
Attachment No. 20 Summary  
Ford Romeo Tractor Plant  
Romeo, Michigan  
MID 078 400 165

Background

Notification and Part A application were submitted on time.

The container storage area consisted of an outdoor area of approximately 10,000 square feet. The capacity was approximately 1,000 drums at 55 gallons each. The surface of the storage area consisted of a mixture of slag and sand. Waste paints and solvents (D001/F003) were stored in this area. The facility was closed in 1984.

Two wastewater treatment lagoons were used to store 1,650,000 gallons of phosphate sludge (F006). Facility submitted a delisting petition for the lagoons, but it was never acted upon. Certification of closure for the lagoons was received 12/17/85. Above ground wastewater treatment tanks were erected to be used in lieu of the wastewater treatment lagoons.

The MDNR reviewed the Ford Romeo Closure Certification submittal of 12/17/85, and feel there were deficiencies in the implementation of the closure plan. These deficiencies included:

1. The UCI method (which is inappropriate for this type of clean-up activity) in the approved closure plan was not followed.
2. The formula for the UCI in SW-846 is the same as used by Ford, but they used a different t-statistic value.
3. Only 2 background samples were taken. Using any statistical method with this small population of data is not accurate.

Also, the MDNR requested in a letter to EPA on 6/27/85, that a minimum total of 24 samples be taken for the rectangular lagoon, and a minimum of 18 samples be taken for the triangular lagoon. The closure certification indicated the company only sampled 19 stations from the two lagoons.

Environmental Significance

Ford Romeo Tractor Plant is an environmentally significant facility. Prior releases have been identified on-site. MDNR has not investigated the releases that company stated have occurred. Documentation of past spills and associated clean-ups should be looked at and summarized during the file search that will be done as part of the preliminary assessment.

The container storage area surface consisted of a mixture of slag and sand. 10 inches of soil was removed from the surface of the drum storage area. Soil sampled were analyzed for E.P. toxicity and the metals



concentrations were below interim drinking water standards. The MDNR recommends clean-ups to background, not drinking water standards.

Past releases include an overflow of the wastewater treatment lagoons in 1983 and an overflow from the wastewater pretreatment tank in 1984. Visual contamination was seen which consisted of a light sheen of oil on the ground. Also, the batch treatment tanks in the wastewater treatment unit have overflowed 7 times since they were build in 1973. Cleanup consisted of diversion of effluent to wastewater treatment lagoons and disposal of soil in wastewater treatment sludge roll-off boxes to a HW landfill. It is not known if any soil testing was done.

#### Recommendations

A preliminary assessment and site investigation (PA/SI) should be carried out. During the PA, a complete file search needs to be done to document past problems at the facility and to check for the presence of solid waste management units. A site investigation walk-over will be done with district and permit staff to check for solid waste management units. The results of all inspections and environmental monitoring should be looked at to assess whether any continuing problems exist that should be addressed in the FMP or a compliance order. Any areas that may require corrective action should be identified. During the site investigation, production areas should be inspected to look for the presence of solid waste management units and evidence of spills.

A fully completed Attachment 20 and a finalized FMP will be submitted to EPA upon completion of PA/SI. Further site investigation work may be recommended, if the P.A. establishes the need for it.



Name of Preparer: SCHOENROCK  
Date: 12-10-85

# Model Facility Management Plan

1. Facility Name: FORD ROAMEC TRACTOR PLANT
2. Facility I.D. Number: MID GFE 400 165
3. Owner and/or Operator: FORD MOTOR COMPANY
4. Facility Location: 701 E. 32 MILE ROAD  
Street Address

Romeo Macomb Michigan 48065  
City County State Zip Code

5. Facility Telephone (if available): (313) 752-6551 X-2166  
R.W. ALFRED
6. Interim Status and/or Permitted Hazardous Waste Units and Capacities of Each Unit:

<u>Type of Units</u>	<u>Size or Capacity</u>	<u>Active or Closed</u>
<input checked="" type="checkbox"/> Storage in Tanks or Containers	10,000 sq. ft. approx. 1000 drums	closed
<input type="checkbox"/> Incinerator		
<input type="checkbox"/> Landfill		
<input checked="" type="checkbox"/> Surface Impoundment	(2) EAST - 650,000 gal./ WEST - 1,000,000 gal./	certified closed 12/85
<input type="checkbox"/> Waste Pile		
<input type="checkbox"/> Land Treatment		
<input type="checkbox"/> Injection Wells		
<input type="checkbox"/> Others (Specify)		

7. Permit Application Status: UNDER CLOSURE (HWDMS action item number)



8. Identification of Hazardous Waste Generated, Treated, Stored or Disposed at the Facility: ( may attach Part A or permit list or reference those documents if listing of wastes is exceptionally long - in that case, to complete this question list wastes of greatest interest and/or quantity and note that additional wastes are managed)

<u>Type of Waste</u>	<u>Quantity</u>	<u>Generated, Treated, Stored or Disposed</u> (note appropriate categories)
F006	1,000,000 gal 1,250 cubic yards debris	generated, treated & stored

9. Review of Response to Solid Waste Management Questionnaire indicates: (check one)

☒ Solid Waste Management Units exist (other than previously identified RCRA units)

☐ No Solid Waste Management Units exist (other than previously identified RCRA units)

☐ It is unclear from review of questionnaire whether or not any solid Waste Management Units exist

☐ Respondent indicates that does not know if any Solid Waste Management Units exist

10. If the response to question 9 is that Solid Waste Management Units exist, than check one of the following:

☒ Releases of hazardous waste or constituents have occurred or are thought to have occurred

☐ Releases of hazardous waste or constituents have not occurred

☐ Releases of hazardous waste or constituents have occurred or are thought to have occurred but have been adequately remedied

☐ It is not known whether a release of hazardous waste or constituents has occurred





11. The facility is on the National Priorities List or proposed update of the List or ERRIS list

                     Yes - indicate List or update

  ✓                     No

                     Yes - ERRIS list

Prior to completion of the Recommendation portion of the Facility Management Plan, the attached Appendix must be completed.

12. Recommendation for Regional Approach to the Facility: Check one

- ✓                     Further Investigation to Evaluate Facility
- Permit Compliance Schedule
- Corrective Action Order (may include compliance schedule)
- Other Administrative Enforcement
- Federal Judicial Enforcement
- Referral to CERCLA for Federally Financed or Enforcement Activity
- Voluntary/Negotiated Action
- State Action

Brief narrative in explanation of selection : Facility did not close per their approved closure plan for the wastewater treatment lagoons. See also question 10 in appendix.

- a). If further investigation alternative is selected:

  ✓                     Site inspection - anticipated inspection date                     

State or Federal inspection negotiable

  ✓                     Preliminary Assessment - anticipated completion date negotiable

                     RI/FS - anticipated date of initiation                     

State/Federal                     

Private Party                      identify party(ies)



## b) If Permit Alternative is Selected: Projected Schedule

Date of Part B Submission: \_\_\_\_\_

Date of Completeness Check: \_\_\_\_\_

Date for Additional Submissions (if required): \_\_\_\_\_

Date of Completion of Technical Review: \_\_\_\_\_

Completion of Draft Permit/Permit Denial: \_\_\_\_\_

Public Notice for Permit Decision: \_\_\_\_\_

Date of Hearing (if appropriate): \_\_\_\_\_

Date for Final Permit or Denial Issuance: \_\_\_\_\_

Description of any corrective action provisions to be included in permit -

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## c) If Corrective Action Order Alternative is Selected:

Estimated Date for Order Issuance: \_\_\_\_\_

Description of Provisions of the Order to be Completed by  
Facility: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Description of Compliance Schedule to be Contained in Order:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## d) If Other Administrative Enforcement Action is Selected:

Projected Date for Issuance of the Order: \_\_\_\_\_

Description of Provisions or Goals of the Order: \_\_\_\_\_



\_\_\_\_\_

\_\_\_\_\_

e) If Judicial Enforcement Alternative Selected:

Date of Referral to Office of Regional Counsel: \_\_\_\_\_

f) If Referral to CERCLA for Action Selected:

Date of Referral to CERCLA Sections: \_\_\_\_\_

g) If Voluntary/Negotiated Action Alternative if Selected:

Date of Initial Contact with Facility: \_\_\_\_\_

Description of Goals of Contact or Discussions with  
Facility: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date for Termination of Discussions if Not Successful:

\_\_\_\_\_

Date of Finalization of Settlement if Negotiation Successful:

\_\_\_\_\_

h) If State Action Alternative is Selected:

Date for Referral to State: \_\_\_\_\_

Name of State Contact: \_\_\_\_\_

Phone: \_\_\_\_\_



## APPENDIX

The questions constituting this Appendix to the Facility Management Plan must be filled out prior to completion of recommendation elements of the Plan. The purpose of this appendix is to provide a summary documentation of the State and/or U.S.EPA review of available information on the subject facility. The intent is that a comprehensive file review will be conducted as the basis for selection of the recommended approach to a given facility. If the Appendix is completed by State personnel questions referring to available data reference information in State files; for Federal personnel the reference is to Federal files. Where questions refer to "all" available data or information and such material is voluminous, the response should indicate that files are voluminous, and then reference most telling information, for example groundwater contaminants found frequently or at extremely high concentrations should be specifically listed, and information most directly supporting recommended approach to facility should be described. If no information is available in facility files, the response should so indicate. It is also anticipated that this Appendix may be updated periodically as more information becomes available.

### 1. Description of All Available Monitoring Data for Facility:

<u>Type of Data</u>	<u>Date</u>	<u>Author</u>	<u>Summary of Results or Conclusions</u>
<del>2/57</del>			
6W monitoring	8/3/84	CLOW	
"	10/22/84	"	

### 2. Description of Enforcement Status:

<u>Type of Action</u>	<u>Date</u>	<u>Local, State or Federal</u>	<u>Result or Status</u>
CONSENT AGREEMENT	10/23/84	FEDERAL	OK

company found to be landfilling F006 wastes in a county landfill.





3. Description of Any Complaints from Public:

<u>Source of Complaint</u>	<u>Date</u>	<u>Recipient</u>	<u>Subject and Response</u>
Air Quality	is known to have had complaints of odors		
Public	84	HWOD	sludge roll-off box dripping as leaving site.
Wayne Disposal	known to have rejected wastes because of free liquids		

4. Description of All Inspection Reports for Facility:

<u>Date of Inspection</u>	<u>Inspector (Local, State, Federal)</u>	<u>Conclusions or Comments</u>
10/11/84	SUBPART-F	
7/20/83	FEDERAL	FEW DEFICIENCIES SENT HAZARDOUS SLUDGE TO A TYPE II LANDFILL
11/2/83	FEDERAL	
7/21/82	FEDERAL	NEEDS GW MONITORING SYSTEM TRAINING + CLOSURE PLANS NOT FOUND AT SITE

5. During inspection of this facility did the inspector note any evidence of past disposal practices not currently regulated under RCRA such as piles of waste or rubbish, injection wells, ponds or surface impoundments that might contain waste or active or inactive landfills?

\_\_\_\_\_ Yes - give date if inspection and describe observation

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

✓ No

\_\_\_\_\_ Don't know



6. Do inspection reports indicate observations of discolored soils or dead vegetation that might be caused by a spill, discharge or disposal of hazardous wastes or constituents?

\_\_\_\_\_ Yes - indicate date of report and describe observations

\_\_\_\_\_

\_\_\_\_\_

☒ No

\_\_\_\_\_ Don't know

7. Do inspection reports indicate the presence of any tanks at the facility which are located below grade and could possibly leak without being noticed by visual observation?

\_\_\_\_\_ Yes - date of inspection and describe information in report

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ No

☒ Don't know

8. Does a groundwater monitoring system exist at the facility? YES

9. If answer to question 8 is yes, is the groundwater system capable of monitoring both regulated RCRA units and other Solid Waste Management Units? yes

Explain - Three wells have been installed downgradient  
(prior to lagoon closure)

\_\_\_\_\_

10. Is the groundwater monitoring system in compliance with applicable RCRA groundwater monitoring standards? unknown

If no, explain deficiency Company started monitoring  
per 265, but insufficient data in our DNR files  
to check if analysis continued. (have record of 2  
quarterly samplings). Upgradient wells (#2, #3) may be  
too close to former lagoons. Well log of MW5 downgradient well  
reports oil slick in cuttings below 14 feet.



11. Describe all information on facility subsurface geology or hydrogeology available.

<u>Type of Information</u>	<u>Author</u>	<u>Date</u>	<u>Summary of Conclusions</u>
Hydro Investigation	Kick	2 22 5/3/84	lagoons constructed on glacial sediments of lacustrine origin
Well Installation "		5/3/84	only have 2 downgradient wells
MW#5 Installation "		8/16/84	oil found in sand * during drilling

12. Did the facility submit a 103(c) notification pursuant to CERCLA?

☐ Yes      Date of Notification \_\_\_\_\_  
☒ No

13. If answer to 12 is yes, briefly summarize content of that notification.  
(waste management units identified, type of waste concerned)

14. Has a CERCLA Preliminary Assessment/Site Investigation (PA/SI) been completed for this facility?

☐ Yes  
☐ No



15. If answer to question 14 is yes, briefly describe conclusions of the PA/SI focusing on types of environmental contamination found, wastes and sources of contamination.

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16. If available, having reviewed the CERCLA notification, RCRA Part A and RCRA Part B, it appears that: (CERCLA unit refers to unit or area of concern in CERCLA response activity)

           RCRA and CERCLA units are same at this facility

           RCRA and CERCLA units are clearly different units

           There is an overlap between the RCRA and CERCLA units  
( some are the same, some are different)

17. Description of Any Past Releases or Environmental Contamination:

<u>Type/Source of Release</u>	<u>Date</u>	<u>Material Released</u>	<u>Quantity</u>	<u>Response</u>
overflow of lagoons	12/16/83	F006	?	light oil sheen seen on ground
overflow from waste- water pretreatment tank	7/4/84	F006	?	" "

Batch treatment tanks in wastewater treatment unit have overflowed 7 times since 1973. Cleanup consists of diversion of effluent to wastewater treatment lagoons. Disposal of soil in wastewater treatment containers to HW landfill.





18. Identification of Reports or Documentation Concerning Each Release  
Described in Item 17.

<u>Title/Type of Report</u>	<u>Date</u>	<u>Author</u>	<u>Recipients</u>	<u>Contents</u>
-----------------------------	-------------	---------------	-------------------	-----------------

19. Highlight any information gaps in the file - describe any plans to obtain  
additional needed information.

20. Summary of major environmental problems noted, desired solution and possible  
approaches.

<u>Problem</u>	<u>Solution</u>	<u>Approach</u>	<u>Pros and Cons</u>
----------------	-----------------	-----------------	----------------------





CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Ford Motor Company  
Ford Tractor Operations

RECEIVED

FEB 03 1986

Romeo Tractor and  
Equipment Plant  
701 East 32 Mile Road  
Romeo, Michigan 48065  
January 28, 1986

Mr. David A. Stringham  
Chief, Solid Waste Branch  
RCRA Activities, Region V  
PO Box A3587  
Chicago, Illinois 60690

SWD - MIS  
U.S. EPA, REGION V

Subject: Information Regarding Potential Releases from  
Solid Waste Management Units  
Ford Motor Company, Romeo Tractor & Equipment Plant  
EPA ID No. MID078400165

Dear Mr. Stringham:

In response to your letter of December 12, 1985, we are submitting the information you requested. We believe that corrective action is not authorized under Section 3004(u) or Section 3008(h) of the Solid Waste Disposal Act, as amended, by the Hazardous Waste Amendments of 1984.

Corrective action is required from "any solid waste management unit at a treatment, storage, or disposal facility seeking a permit". Corrective action is not required for the lagoons or container storage area that previously served as waste storage facilities at the Romeo Tractor Plant because we are not "seeking a permit" for these facilities. In addition, the facilities covered by the statutes include only the waste storage facilities and any attempt to expand that term to the entire plant site is inappropriate.


On November 18, 1980, as modified January 31, 1984, we submitted Part A applications for permits to store hazardous waste at two lagoons and a container storage area at the Plant. The container storage area was closed under RCRA interim status in November, 1984 pursuant to a closure plan submitted by Ford in January, 1984 and approved by EPA in April, 1984. The lagoons were closed under RCRA interim status in December, 1985 pursuant to a closure plan submitted by Ford Motor Company in October, 1984 and approved by EPA in March, 1985. Accordingly, Ford Motor Company is no longer seeking a permit.



Also, corrective actions apply only to a facility "seeking a permit". The EPA has attempted by its final codification rule published in the July 15, 1985, Federal Register (50 FR 28702-55) to expand "facility" to include the entire site under the control of the owner or operator engaged in hazardous waste management. This is an unauthorized expansion of the legislative language and is invalid for various other legal reasons. We understand this is one of the issues to be resolved in a judicial review of the final codification rule.

If you require any additional information concerning this submittal, please contact Mr. Joseph W. Moosekian, Plant Engineering Department on (313) 752-8303.

Sincerely,

  
\_\_\_\_\_  
J. van de Kerckhof,  
Plant Manager

Attachment

cc: G. Kircos  
V. H. Sussman



CERTIFICATION REGARDING POTENTIAL RELEASES FROM  
SOLID WASTE MANAGEMENT UNITS

Facility Name : Ford Motor Company, Romeo Tractor Plant  
EPA I.D. Number : MID 078400165  
Location City : Romeo  
State : Michigan, 48065

1. Are there any of the following solid waste management units (existing or closed) at your facility? NOTE: DO NOT INCLUDE HAZARDOUS WASTE UNITS CURRENTLY SHOWN IN YOUR PART A APPLICATION.

	<u>Yes</u>	<u>No</u>
. Landfill	_____	<u>x</u>
. Surface Impoundment	_____	<u>x</u>
. Land Farm	_____	<u>x</u>
. Waste Pile	_____	<u>x</u>
. Incinerator	_____	<u>x</u>
. Storage Tank (Aboveground)	<u>x</u>	_____
. Storage Tank (Underground)	<u>x</u>	_____
. Container Storage Area	<u>x</u>	_____
. Injection Wells	_____	<u>x</u>
. Wastewater Treatment Units	<u>x</u>	_____
. Transfer Stations	_____	<u>x</u>
. Waste Recycling Operations	_____	<u>x</u>
. Waste Treatment, Detoxification	_____	<u>x</u>
. Other _____	_____	<u>x</u>

2. If there are "Yes" answers to any of the items in Number 1 above, please provide a description of the wastes that were stored, treated or disposed of in each unit. In particular, please focus on whether or not the wastes would be considered as hazardous wastes or hazardous constituents under RCRA. Also include any available data on quantities or volume of wastes disposed of and the dates of disposal. Please also provide a description of each unit and include capacity, dimensions and location at facility. Provide a site plan if available.

\_\_\_\_\_  
\_\_\_\_\_  
See Attachment II  
\_\_\_\_\_  
\_\_\_\_\_

NOTE: Hazardous wastes are those identified in 40 CFR 261. Hazardous constituents are those listed in Appendix VIII of 40 CFR Part 261.





3. For the units noted in Number 1 above and also those hazardous waste units in your Part A application, please describe for each unit any data available on any prior or current releases of hazardous wastes or constituents to the environment that may have occurred in the past or may still be occurring.

Please provide the following information:

- a. Date of release
- b. Type of waste released
- c. Quantity or volume of waste released
- d. Describe nature of release (i.e., spill, overflow, ruptured pipe or tank, etc.)

See Attachment II

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4. In regard to the prior or continuing releases described in Number 3 above, please provide (for each unit) any analytical data that may be available which would describe the nature and extent of environmental contamination that exists as a result of such releases. Please focus on concentrations of hazardous wastes or constituents present in contaminated soil or groundwater.

See Attachment III

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I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the submittal is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. (42 U.S.C. 6902 et seq. and 40 CFR 270.11(d)).

J. van de Kerckhof, Plant Manager

Typed Name and Title

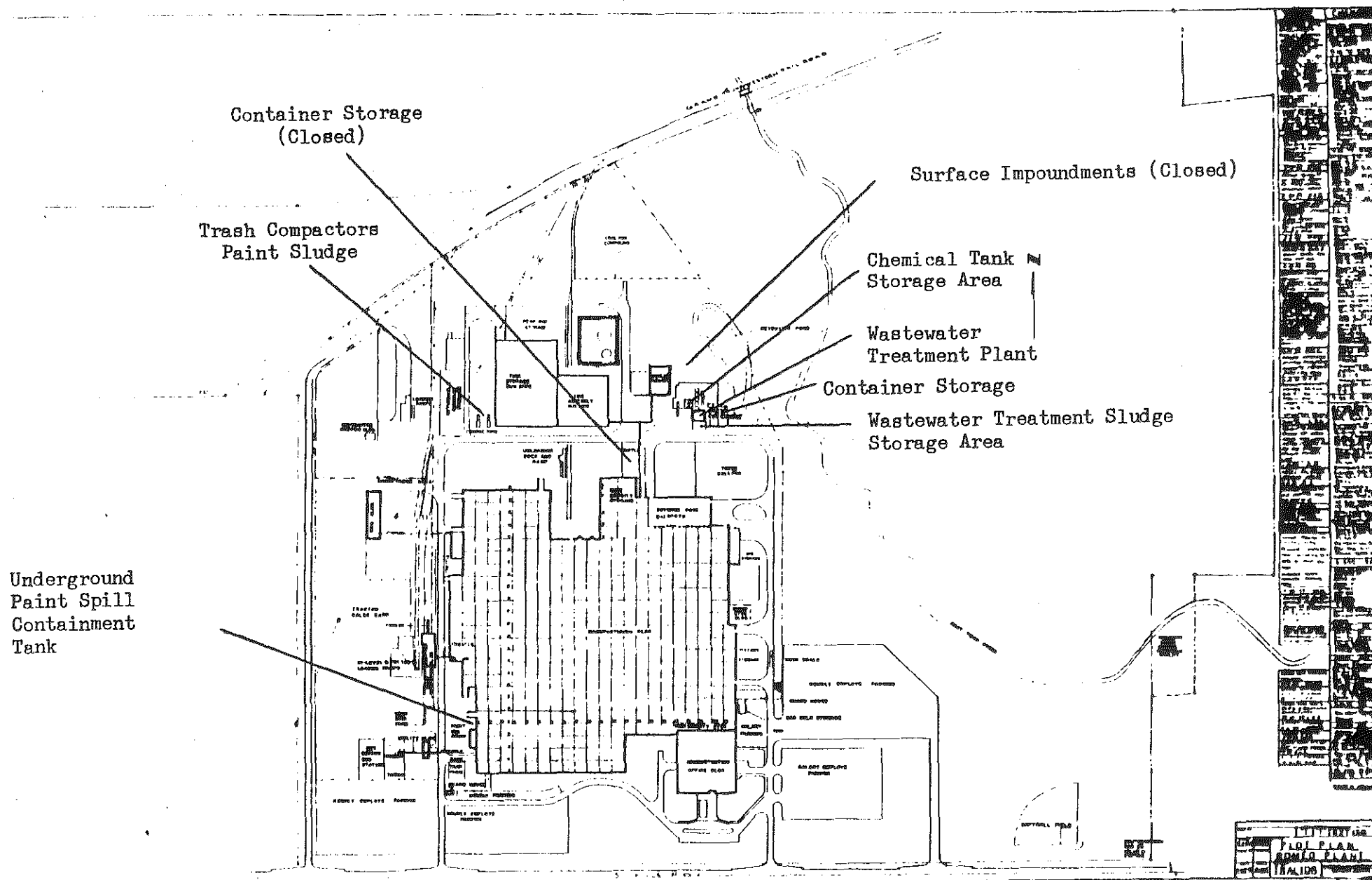
J. van de Kerckhof

Signature

1/23/1986

Date



SITE PLAN



Potential Releases from Solid Waste Management Units  
Ford Motor Company Romeo Tractor Plant  
MID 078400165

2. Solid Waste Management Unit Descriptions.  
Attachment I is a plant site plan.

A. Container Storage Area - See Site Plan - Attachment I.

A container storage area (73' x 37') for hazardous waste stored in 55-gallon drums is shown on the plant site plan. This area is curbed and secured by a 6' chain link fence. Storage of hazardous waste includes waste paint, spent solvent and occasionally non-hazardous material such as grease and oily waste water. Some of the non-hazardous materials may contain hazardous constituents listed in 40 CFR 261, Appendix VIII. All hazardous wastes are removed by a license hazardous waste hauler for disposal or reclaim within 90 days pursuant to 40 CFR 262.34.

B. Container Storage Area (Closed) - See Site Plan - Attachment I.

On January 31, 1984, a closure plan was submitted to the U.S. E.P.A. for the closure of a 10,000 Sq. Ft. container storage area located north of the Manufacturing Plant. Included in the January 31, 1984 submittal was the necessary closure certification and information as required under 40CFR 265.115. The Plan called for the removal of all hazardous waste containers (approximately 12,000 gallons of paint and solvent mixtures) to be transported to an U.S. E.P.A. approved incineration facility in Ohio. Approximately, ten inches of soil was removed from the storage area and disposed of in a secure hazardous waste landfill. The closure plan was approved by the Waste Management Division U.S. E.P.A., Region 5, April 17, 1984.

C. Aboveground Chemical Storage Area (Waste Plant)

An aboveground chemical tank storage area is located on the west side of the wastewater treatment plant. Two (2) 10,000-gallon waste oil tanks are located in this area. The area is contained by a 2' concrete dike that was installed when the wastewater treatment plant was built in 1973. In October, 1983, the soil underneath this storage area was removed and a concrete floor installed. The soil was removed by a licensed contractor and disposed of in a secure hazardous waste landfill.

The waste oil stored in the (2) 10,000-gal. storage tanks is oil removed during the wastewater treatment process. The oil (estimated 20,000-gal. per year) is sold for reclaim. The oil is not a hazardous waste but may contain hazardous constituents.



D. Wastewater Treatment Units (See Site Plan - Attachment I)

The original wastewater treatment facility for this plant was constructed in 1973. It included (5) 30,000-gal. batch treatment tanks; (2) 10,000-gal. sludge holding tanks; (2) 10,000-gal. chrome treatment tanks, a 150,000-gal. final effluent tank and a centrifuge for sludge dewatering. The facility received approximately 120,000-gal. of plant process wastewater per day, primarily from inplant paint spray booths and phosphating washers. The facility never utilized the chrome treatment system because a process using chrome was never installed at the Plant.

All plant process and oily wastewaters drained by gravity to one of two below grade wetwells from which it was pumped into one of (5) 30,000-gal. batch treatment tanks. Wastewater treatment included the addition of alum or ferric chloride to adjust the pH. The batch tank was then mixed for 10-15 minutes, and a hydrate lime slurry was added to return the pH between 7 and 8. A polymer was then added for solids settling; one to two hours was normally allowed. The liquid sludge was removed from the bottom of the batch tank and transferred to a sludge holding tank. From there it was dewatered using a centrifuge filter. Approximately 20 yards of sludge from the centrifuge was accumulated monthly in a hopper and removed by a licensed contractor for off-site disposal. The water removed by the centrifuge was recirculated to the wastewater treatment plant wetwell for retreatment. The clear effluent was discharged from the bottom of the batch tanks to the municipal sewer. Frequently a layer of oil would remain the batch tank after all the clear effluent was removed. This oil layer was pumped to an oil storage tank located on site.

The facility had two lagoons located near the wastewater treatment plant that were originally installed for the storage of waste oil and sludge from the treatment process. The lagoons were also used to hold excess wastewater that could not be handled directly by the treatment plant or to equalize the wastewater so it could be treated more effectively at a later time. The lagoons were occasionally skimmed for oil and excess wastewater pumped off and recirculated to the treatment tanks.

The Plant submitted its closure plan for the surface impoundment on October 1, 1984 which was approved by the U.S. EPA on March 13, 1985. The plant implemented its surface impoundments closure plan and certification pursuant to 40 CFR 265.228 and 265.112 for both of its hazardous waste surface impoundments in 1985.





D. Wastewater Treatment Units (Cont'd.)

In 1985, the plant completed construction of modifications to upgrade the existing facilities at its wastewater treatment plant. The purpose of these improvements was to include additional wastewater treatment capacity that would allow the plant to confine any treatment of hazardous waste to totally enclosed "wastewater treatment units" per 40 CFR 260.10, cease operation of both hazardous waste surface impoundments and withdraw from the RCRA permit program.

The modification to the waste treatment plant included a flow-thru gravity operation consisting of a new screening building, (2) 190,000-gal. influent tanks with weirs for oil skimming. The modifications of (5) 30,000-gal. batch treatment tanks to include oil skimming weirs. The conversion of (2) 10,000-gal. chrome treatment tanks to sludge holding tanks, and the installation of a new 15 cubic foot sludge filter press.

Additionally, a spill containment area was constructed surrounding the treatment tanks consisting of 6' diked walls and concrete floors. The process wastewater now is pumped through a rotary filter for debris removal and then into one of (2) 190,000-gal. influent tanks. The water is drawn from the bottom of the tanks into one of (5) 30,000-gal. batch treatment tanks. (Oil is allowed to separate and overflow a weir into one of (2) 20,000-gal. oil storage tank for reclaim). The wastewater treatment process remains the same with the addition of alum and ferric chloride. After the sludge is removed from the sludge tanks it is dewatered through a sludge filter press and dropped into a 12 cubic yard roll-off box. The sludge is now stored outside in a 57'x30' covered storage area with diked walls and sloped concrete floor. This modification was completed in 1985 and is located at the south end of the wastewater treatment facility.

Approximately 24 cubic yards of sludge is generated each month and is shipped in roll-off boxes by a licensed contractor to a secure hazardous waste landfill. We understand that EPA considers this waste to be a listed hazardous waste F006, however test results for E. P. toxicity, corrosivity, reactivity and ignitability confirm that this waste does not exhibit hazardous characteristics.

E. Trash Compactor

Two trash compactors are used by the plant to compress refuse including wood pallets, wood dunnage, cardboard, paper, glass, textiles and floor sweepings into 40 cubic yard boxes. Approximately (3) boxes of compacted trash are removed each operating day for off-site disposal.



F. Residual Paint Waste from Process Cleaning Operations.

The waste and paint sludge from the paint spray booth systems is removed from the manufacturing plant and disposed of into (2) 12 cubic yards lugger boxes in the vicinity of the trash compactor area. The boxes are removed approximately once per month by a licensed contractor and disposed of off-site. This paint sludge waste does not exhibit the hazardous characteristics of ignitability, corrosivity, reactivity or EP toxicity and is not a listed hazardous waste. It may, however, contain hazardous constituents.

G. Underground Tank.

A 280-gallon underground storage tank located north of the paint mix room is used to contain spills from the mix room. If a spill occurs, the spilled material is removed from the tank within 90 days per 40 CFR 262.34. The waste collected in this tank may, at times, be characterized as a hazardous waste (EPA No. D001) and may contain hazardous constituents.

3. Potential Releases of Hazardous Waste and Hazardous Constituents.

A. History of Pollution Incidents at Solid Waste Management Units.

- . October 18, 1977 - Ref. US-EPA Report 585-018 - Accidental discharge of 500-gallons oily waste to the Village of Romeo Waste Treatment Plant. This discharge was due to operator error. An oil recovery contractor assisted the plant during clean-up.
- . December 5, 1983 - Ford Motor Company Report dated December 16, 1983. A 3" valve had blown off of the final effluent tank and caused an overflow of the lagoons. During clean-up operations, a light oil sheen was observed at the outfall.
- . July 4, 1984 - Ford Motor Company Report July 19, 1984. Michigan Department of Natural Resources Log #07-84-01-0099. Overflow of wastewater from Pretreatment Plant due to some process equipment not being shutdown for the one day holiday period. There was no observed impact to East Pond Creek other than the presence of a slight oil sheen.



3. Potential Releases of Hazardous Waste and Hazardous Constituents.  
(Cont'd.)

B. Conversation with wastewater treatment personnel indicates that the batch treatment tanks have overflowed approximately (7) times since construction in 1973. Cleanup operations consisted of diverting the water to the surface impoundments and disposing of contaminated soil in the wastewater treatment sludge containers. During modifications in 1985, contaminated soil (approximately 120 Cubic Yards.) was removed from under the treatment tanks and disposed of at a hazardous waste landfill. This soil may have contained hazardous constituents. After the removal of this soil (estimated 120 cubic yards) borings were randomly taken of the surrounding area and a composite sample was tested for E.P. toxicity. (See Attachment IV dated April 22, 1985) The area surrounding the treatment plant is now completely contained by 6' concrete walls and concrete floors.

4. Analytical Data.

- . Five (5) groundwater monitoring wells were installed in the vicinity of the former lagoons. Results of analyses of samples taken from these wells is included as Attachment III.
- . Test results from soil from under wastewater treatment tanks and containment area prior to placement of concrete floor is Attachment IV.



Romeo Tractor Plant  
Ground Water Monitoring Data  
Drinking Water and Water Quality Parameters  
Well: 1 Down Gradient

Date Sampled: 08-08-84

Parameter	Units	
Static	Feet	747.72
Arsenic	mg/l	0.005
Barium	mg/l	0.300
Cadmium	mg/l	<0.010
Chromium	mg/l	0.030
Fluoride	mg/l	0.780
Lead	mg/l	<0.050
Mercury	mg/l	0.001
Nitrate	mg/l	0.120
Selenium	mg/l	<0.005
Silver	mg/l	<0.020
Endrin	ug/l	<0.0002
Lindane	ug/l	<0.004
Methoxychor	ug/l	<0.100
Toxaphene	ug/l	<0.005
2,4-D	ug/l	<0.160
2,4,5-TP/Silverx	ug/l	<0.010
Radium	pCi/l	<1.00
Gross Alpha	pCi/l	<2.00
Gross Beta	pCi/l	5.00
Coliform Bact.	co/100ml	<1.00
Chloride	mg/l	27.0
Iron	mg/l	5.70
Manganese	mg/l	0.190
Phenols	mg/l	<0.002
Sodium	mg/l	19.0
Sulfate	mg/l	50.0

Time of Execution: 01/23/86 1048.6 est Thu





Ramee Tractor Plant  
Ground Water Monitoring Data  
Contamination Indicating Parameters

Well: 1 Down Gradient

Date Sampled: 06-08-84

Parameter Units

Static Feet 747.72

ph1 7.46  
ph2 7.46  
ph3 7.47  
ph4 7.46  
Number of Samples 4  
Mean Value 7.46  
Variance 2.42E-05  
Standard Deviation 4.92E-03

Sp.Cond1 umhos/cm 740.  
Sp.Cond2 umhos/cm 740.  
Sp.Cond3 umhos/cm 740.  
Sp.Cond4 umhos/cm 740.  
Number of Samples 4  
Mean Value 740.0  
Variance 0.00E+00  
Standard Deviation 0.00E+00

TDC1 mg/l 4.00  
TDC2 mg/l 4.00  
TDC3 mg/l 4.00  
TDC4 mg/l 3.00  
Number of Samples 4  
Mean Value 3.75  
Variance 2.50E-01  
Standard Deviation 5.00E-01

TOX1 mg/l 0.155  
TOX2 mg/l 0.150  
TOX3 mg/l 0.155  
TOX4 mg/l 0.150  
Number of Samples 4  
Mean Value 0.152  
Variance 8.33E-06  
Standard Deviation 2.89E-03

Summary of Well Sampling Data

Parameter	Mean Value	Variance	Std. Deviation	Number of Samples
pH:	7.46	2.42E-05	4.92E-03	4
Sp.Cond:	740.0	0.00E+00	0.00E+00	4
TDC:	3.75	2.50E-01	5.00E-01	4
TOX:	0.152	8.33E-06	2.89E-03	4

Time of Execution: 01/23/86 1502.2 est Thu



Romeo Tractor Plant  
Ground Water Monitoring Data  
Drinking Water and Water Quality Parameters  
Well: 1A Down Gradient

Date Sampled: 10-22-84  
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Parameter -----	Units -----	
Static	Feet	747.59
Arsenic	mg/l	0.005
Barium	mg/l	1.00
Cadmium	mg/l	<0.010
Chromium	mg/l	0.020
Fluoride	mg/l	0.240
Lead	mg/l	<0.050
Mercury	mg/l	<0.0005
Nitrate	mg/l	<0.020
Selenium	mg/l	<0.005
Silver	mg/l	<0.020
Endrin	ug/l	<0.0002
Lindane	ug/l	<0.004
Methoxychlor	ug/l	<0.100
Toxaphene	ug/l	<0.005
2,4-D	ug/l	<0.100
2,4,5-TP/Silvex	ug/l	<0.010
Radium	pCi/l	<1.00
Gross Alpha	pCi/l	7.00
Gross Beta	pCi/l	6.00
Coliform Bact.	co/100ml	<1.00
Chloride	mg/l	20.0
Iron	mg/l	9.00
Manganese	mg/l	0.230
Phenols	mg/l	0.016
Sodium	mg/l	13.0
Sulfate	mg/l	71.0

Time of Execution: 01/23/86 1059.4 est Thu



Romee Tractor Plant  
Ground Water Monitoring Data  
Contamination Indicating Parameters  
Well: 1A Down Gradient

Date Sampled: 10-22-84

Parameter Units

Static Feet 747.59

ph1 7.60  
ph2 7.60  
ph3 7.60  
ph4 7.60  
Number of Samples 4  
Mean Value 7.60  
Variance 0.00E+00  
Standard Deviation 0.00E+00

Sp.Cond1 umhos/cm 740.  
Sp.Cond2 umhos/cm 740.  
Sp.Cond3 umhos/cm 735.  
Sp.Cond4 umhos/cm 740.  
Number of Samples 4  
Mean Value 738.8  
Variance 6.25E+00  
Standard Deviation 2.50E+00

TDC1 ug/l 3.00  
TDC2 ug/l 2.00  
TDC3 ug/l 2.00  
TDC4 ug/l 2.00  
Number of Samples 4  
Mean Value 2.25  
Variance 2.50E-01  
Standard Deviation 5.00E-01

TOX1 ug/l 0.110  
TOX2 ug/l 0.095  
TOX3 ug/l 0.098  
TOX4 ug/l 0.099  
Number of Samples 4  
Mean Value 0.100  
Variance 4.30E-05  
Standard Deviation 6.56E-03

Summary of Well Sampling Data

Parameter	Mean Value	Variance	Std. Deviation	Number of Samples
pH:	7.60	0.00E+00	0.00E+00	4
Sp.Cond:	738.8	6.25E+00	2.50E+00	4
TDC:	2.25	2.50E-01	5.00E-01	4
TOX:	0.100	4.30E-05	6.56E-03	4

Time of Execution: 01/23/86 1502.2 est Thu



Romeo Tractor Plant  
Ground Water Monitoring Data  
Drinking Water and Water Quality Parameters  
Well: 1A Down Gradient

Date Sampled: 01-08-85 04-10-85

Parameter	Units		
Static	Feet	748.57	749.17
Arsenic	mg/l	<0.005	<0.005
Barium	mg/l	0.400	0.150
Cadmium	mg/l	<0.010	<0.010
Chromium	mg/l	<0.020	<0.020
Fluoride	mg/l	0.200	0.160
Lead	mg/l	<0.050	<0.050
Mercury	mg/l	<0.0005	<0.0005
Nitrate	mg/l	<0.020	0.020
Selenium	mg/l	<0.005	<0.005
Silver	mg/l	<0.020	<0.020
Endrin	ug/l	<0.0002	<0.0002
Lindane	ug/l	<0.004	<0.004
Methoxychlor	ug/l	<0.100	<0.100
Toxaphene	ug/l	<0.005	<0.005
2,4-D	ug/l	<0.100	<0.100
2,4,5-TP/Silver	ug/l	<0.010	<0.010
Radium	pCi/l	<1.00	<1.00
Gross Alpha	pCi/l	<2.00	<2.00
Gross Beta	pCi/l	<3.00	<3.00
Coliform Bact.	co/100ml	<1.00	<1.00
Chloride	mg/l	21.0	18.0
Iron	mg/l	3.80	2.00
Manganese	mg/l	0.130	0.080
Phenols	mg/l	<0.002	0.004
Sodium	mg/l	13.0	15.0
Sulfate	mg/l	71.0	79.0

Time of Execution: 01/23/86 1104.3 est Thu





## Remed Tractor Plant

## Ground Water Monitoring Data

## Contamination Indicating Parameters

Well: 1A Down Gradient

Date Sampled: 01-08-85 04-10-85 09-30-85

Parameter Units

Parameter	Units	01-08-85	04-10-85	09-30-85
Static	Feet	748.57	749.17	746.84
ph1		6.71	6.42	6.90
ph2		7.05	6.45	7.00
ph3		7.04	6.48	7.10
ph4		7.13	6.49	7.10
Number of Samples		4	4	4
Mean Value		6.98	6.46	7.03
Variance		3.46E-02	1.00E-03	9.17E-03
Standard Deviation		1.86E-01	3.16E-02	9.57E-02
Sp. Cond1	umhos/cm	720.	620.	680.
Sp. Cond2	umhos/cm	715.	630.	700.
Sp. Cond3	umhos/cm	710.	620.	700.
Sp. Cond4	umhos/cm	720.	630.	710.
Number of Samples		4	4	4
Mean Value		716.3	625.0	697.5
Variance		2.29E+01	3.33E+01	1.58E+02
Standard Deviation		4.79E+00	5.77E+00	1.26E+01
TDC1	mg/l	3.00	7.00	11.0
TDC2	mg/l	3.00	3.00	11.0
TDC3	mg/l	3.00	10.0	20.0
TDC4	mg/l	3.00	5.00	19.0
Number of Samples		4	4	4
Mean Value		3.00	6.25	15.25
Variance		0.00E+00	8.92E+00	2.43E+01
Standard Deviation		0.00E+00	2.99E+00	4.92E+00
TOX1	mg/l	0.050	0.120	0.099
TOX2	mg/l	0.050	0.110	0.103
TOX3	mg/l	0.040	0.400	0.100
TOX4	mg/l	0.050	0.040	0.102
Number of Samples		4	4	4
Mean Value		0.048	0.168	0.101
Variance		2.50E-05	2.53E-02	3.33E-06
Standard Deviation		5.00E-03	1.59E-01	1.83E-03

## Summary of Well Sampling Data

Parameter	Mean Value	Variance	Std. Deviation	Number of Samples
pH:	6.82	8.42E-02	2.90E-01	12
Sp. Cond:	679.6	1.75E+03	4.18E+01	12
TDC:	8.17	3.83E+01	6.19E+00	12
TOX:	0.105	9.53E-03	9.76E-02	12

Time of Execution: 01/23/86 1502.2 est Thu



Romeo Tractor Plant  
Ground Water Monitoring Data  
Drinking Water and Water Quality Parameters  
Well: 2 Up Gradient

Date Sampled: 08-03-84 10-22-84

Parameter	Units		
Static	Feet	748.15	748.32
Arsenic	mg/l	<0.005	<0.005
Barium	mg/l	0.100	<0.100
Cadmium	mg/l	<0.010	<0.010
Chromium	mg/l	<0.020	0.020
Fluoride	mg/l	0.180	0.240
Lead	mg/l	<0.050	<0.050
Mercury	mg/l	0.001	<0.0005
Nitrate	mg/l	<0.020	<0.020
Selenium	mg/l	<0.005	<0.005
Silver	mg/l	<0.020	<0.020
Endrin	ug/l	<0.0002	<0.0002
Lindane	ug/l	<0.004	<0.004
Methoxychlor	ug/l	<0.100	<0.100
Toxaphene	ug/l	<0.005	<0.005
2,4-D	ug/l	<0.100	<0.100
2,4,5-TP/Silvex	ug/l	<0.010	<0.010
Radium	pCi/l	<1.00	<1.00
Gross Alpha	pCi/l	<2.00	<2.00
Gross Beta	pCi/l	4.00	<3.00
Coliform Bact.	co/100ml	<1.00	<1.00
Chloride	mg/l	144.	22.0
Iron	mg/l	1.30	1.60
Manganese	mg/l	0.090	0.100
Phenols	mg/l	0.003	0.007
Sodium	mg/l	13.0	13.0
Sulfate	mg/l	70.0	79.0

Time of Execution: 01/23/86 1048.6 est Thu



## Remes Tractor Plant

## Ground Water Monitoring Data

## Contamination Indicating Parameters

Well: 2 Up Gradient

Date Sampled: 08-03-84 10-22-84

Parameter Units

Parameter	Units	748.15	748.32
Static	Feet	748.15	748.32

ph1		6.89	7.60
ph2		6.89	7.50
ph3		6.89	7.40
ph4		6.90	7.60
Number of Samples		4	4
Mean Value		6.89	7.53
Variance		2.42E-05	9.17E-03
Standard Deviation		4.92E-03	9.57E-02

Sp.Cond1	umhos/cm	750.	760.
Sp.Cond2	umhos/cm	765.	760.
Sp.Cond3	umhos/cm	770.	745.
Sp.Cond4	umhos/cm	770.	750.
Number of Samples		4	4
Mean Value		763.8	753.8
Variance		8.96E+01	5.63E+01
Standard Deviation		9.46E+00	7.50E+00

TDC1	mg/l	4.00	3.00
TDC2	mg/l	3.00	3.00
TDC3	mg/l	3.00	3.00
TDC4	mg/l	3.00	3.00
Number of Samples		4	4
Mean Value		3.25	3.00
Variance		2.50E-01	0.00E+00
Standard Deviation		5.00E-01	0.00E+00

TOX1	mg/l	0.090	0.100
TOX2	mg/l	0.105	0.086
TOX3	mg/l	0.090	0.097
TOX4	mg/l	0.090	0.099
Number of Samples		4	4
Mean Value		0.094	0.095
Variance		5.63E-05	4.17E-05
Standard Deviation		7.50E-03	6.45E-03

## Summary of Well Sampling Data

Parameter	Mean Value	Variance	Std. Deviation	Number of Samples
pH:	7.21	1.18E-01	3.44E-01	8
Sp.Cond:	758.8	9.11E+01	9.54E+00	8
TDC:	3.13	1.25E-01	3.54E-01	8
TOX:	0.095	4.28E-05	6.55E-03	8

Time of Execution: 01/23/86 1562.2 est Thu



Romeo Tractor Plant  
Ground Water Monitoring Data  
Drinking Water and Water Quality Parameters  
Well: 2 Up Gradient

Date Sampled: 01-08-85 04-10-85

Parameter	Units		
Static	Feet	749.65	750.44
Arsenic	mg/l	<0.005	<0.005
Barium	mg/l	<0.100	0.150
Cadmium	mg/l	<0.010	<0.010
Chromium	mg/l	<0.020	<0.020
Fluoride	mg/l	0.180	0.100
Lead	mg/l	<0.050	<0.050
Mercury	mg/l	<0.0005	<0.0005
Nitrate	mg/l	<0.020	0.040
Selenium	mg/l	<0.005	<0.005
Silver	mg/l	<0.020	<0.020
Endrin	ug/l	<0.0002	<0.0002
Lindane	ug/l	<0.004	<0.004
Methoxychlor	ug/l	<0.100	<0.100
Toxaphene	ug/l	<0.005	<0.005
2,4-D	ug/l	<0.100	<0.100
2,4,5-TP/Silvex	ug/l	<0.010	<0.010
Radium	pCi/l	<1.00	<1.00
Gross Alpha	pCi/l	<2.00	<2.00
Gross Beta	pCi/l	<3.00	<3.00
Coliform Bact.	co/100ml	<1.00	<1.00
Chloride	mg/l	21.0	21.0
Iron	mg/l	1.10	1.20
Manganese	mg/l	0.080	0.080
Phenols	mg/l	0.003	<0.002
Sodium	mg/l	12.0	16.0
Sulfate	mg/l	87.0	93.0

Time of Execution: 01/23/86 1059.4 est Thu





Renee Tractor Plant  
Ground Water Monitoring Data  
Contamination Indicating Parameters  
Well: 2 Up Gradient

Date Sampled: 01-06-85 04-10-85 09-30-85

Parameter Units

Static Feet 749.65 750.44 748.09

ph1 6.72 6.14 7.00  
ph2 6.77 6.22 7.10  
ph3 6.84 6.33 7.10  
ph4 6.91 6.38 7.10  
Number of Samples 4 4 4  
Mean Value 6.81 6.27 7.08  
Variance 6.87E-03 1.17E-02 2.50E-03  
Standard Deviation 8.29E-02 1.08E-01 5.00E-02

Sp.Cond1 umhos/cm 765. 680. 680.  
Sp.Cond2 umhos/cm 770. 670. 680.  
Sp.Cond3 umhos/cm 765. 670. 685.  
Sp.Cond4 umhos/cm 755. 680. 685.  
Number of Samples 4 4 4  
Mean Value 763.8 675.0 682.5  
Variance 3.96E+01 3.33E+01 8.33E+00  
Standard Deviation 6.29E+00 5.77E+00 2.89E+00

TOC1 mg/l 5.00 5.00 3.00  
TOC2 mg/l 5.00 5.00 2.00  
TOC3 mg/l 5.00 4.00 15.0  
TOC4 mg/l 5.00 5.00 14.0  
Number of Samples 4 4 4  
Mean Value 5.00 4.75 8.50  
Variance 0.00E+00 2.50E-01 4.83E+01  
Standard Deviation 0.00E+00 5.00E-01 6.95E+00

TOX1 mg/l 0.030 0.235 0.065  
TOX2 mg/l 0.030 0.050 0.086  
TOX3 mg/l 0.040 0.215 0.080  
TOX4 mg/l 0.030 0.180 0.078  
Number of Samples 4 4 4  
Mean Value 0.033 0.170 0.077  
Variance 2.50E-05 6.92E-03 7.83E-05  
Standard Deviation 5.00E-03 8.32E-02 8.85E-03

Summary of Well Sampling Data

Parameter	Mean Value	Variance	Std. Deviation	Number of Samples
pH:	6.72	1.29E-01	3.59E-01	12
Sp.Cond:	707.1	1.78E+03	4.22E+01	12
TOC:	6.08	1.64E+01	4.06E+00	12
TOX:	0.093	5.49E-03	7.41E-02	12

Time of Execution: 01/23/86 1502.2 est Thu



Romeo Tractor Plant  
 Ground Water Monitoring Data  
 Drinking Water and Water Quality Parameters  
 Well: 3 Up Gradient

Date Sampled: 08-07-84 10-23-84  
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Parameter -----	Units -----		
Static	Feet	748.12	748.46
Arsenic	mg/l	<0.005	0.005
Barium	mg/l	0.200	<0.100
Cadmium	mg/l	<0.010	<0.010
Chromium	mg/l	<0.020	<0.020
Fluoride	mg/l	0.210	0.240
Lead	mg/l	<0.050	<0.050
Mercury	mg/l	0.0008	<0.0005
Nitrate	mg/l	0.110	<0.020
Selenium	mg/l	<0.005	<0.005
Silver	mg/l	<0.020	<0.020
Endrin	ug/l	<0.0002	<0.0002
Lindane	ug/l	<0.004	<0.004
Methoxychor	ug/l	<0.100	<0.100
Toxaphene	ug/l	<0.005	<0.005
2,4-D	ug/l	<0.100	<0.100
2,4,5-TF/Silvex	ug/l	<0.010	<0.010
Radium	pCi/l	<1.00	<1.00
Gross Alpha	pCi/l	<2.00	<2.00
Gross Beta	pCi/l	<3.00	<3.00
Coliform Bact.	co/100ml	<1.00	1.00
Chloride	mg/l	27.0	22.0
Iron	mg/l	0.960	0.040
Manganese	mg/l	0.230	0.260
Phenols	mg/l	0.005	0.004
Sodium	mg/l	24.0	17.0
Sulfate	mg/l	67.0	76.0

Time of Execution: 01/23/86 1048.6 est Thu



Renee Tractor Plant  
Ground Water Monitoring Data  
Contamination Indicating Parameters  
Well: 3 Up Gradient

Date Sampled: 08-07-84 10-22-84

Parameter Units

Static Feet 748.12 748.46

ph1 7.00 7.70  
ph2 7.03 7.60  
ph3 7.04 7.60  
ph4 7.05 7.60  
Number of Samples 4 4  
Mean Value 7.03 7.63  
Variance 4.67E-04 2.50E-03  
Standard Deviation 2.16E-02 5.00E-02

Sp.Cond1 umhos/cm 710. 690.  
Sp.Cond2 umhos/cm 710. 690.  
Sp.Cond3 umhos/cm 715. 690.  
Sp.Cond4 umhos/cm 710. 690.  
Number of Samples 4 4  
Mean Value 711.3 690.0  
Variance 6.25E+00 0.00E+00  
Standard Deviation 2.50E+00 0.00E+00

TOC1 mg/l 4.00 4.00  
TOC2 mg/l 4.00 3.00  
TOC3 mg/l 4.00 3.00  
TOC4 mg/l 4.00 3.00  
Number of Samples 4 4  
Mean Value 4.00 3.25  
Variance 0.00E+00 2.50E-01  
Standard Deviation 0.00E+00 5.00E-01

TOX1 mg/l 0.830 0.160  
TOX2 mg/l 0.710 0.170  
TOX3 mg/l 0.860 0.140  
TOX4 mg/l 0.800 0.140  
Number of Samples 4 4  
Mean Value 0.800 0.153  
Variance 4.20E-03 2.25E-04  
Standard Deviation 6.48E-02 1.50E-02

Summary of Well Sampling Data

Parameter	Mean Value	Variance	Std. Deviation	Number of Samples
pH:	7.33	1.02E-01	3.20E-01	8
Sp.Cond:	700.6	1.32E+02	1.15E+01	8
TOC:	3.63	2.68E-01	5.18E-01	8
TOX:	0.476	1.22E-01	3.49E-01	8

Time of Execution: 01/23/86 1502.2 est Thu



Romeo Tractor Plant  
Ground Water Monitoring Data  
Drinking Water and Water Quality Parameters  
Well: 3 Up Gradient

Date Sampled: 01-08-85 04-10-85

Parameter	Units		
Static	Feet	749.83	750.54
Arsenic	mg/l	<0.005	<0.005
Barium	mg/l	0.100	0.100
Cadmium	mg/l	<0.010	<0.010
Chromium	mg/l	<0.020	<0.020
Fluoride	mg/l	0.170	0.140
Lead	mg/l	<0.050	<0.050
Mercury	mg/l	<0.0005	<0.0005
Nitrate	mg/l	<0.020	<0.020
Selenium	mg/l	<0.005	<0.005
Silver	mg/l	<0.020	<0.020
Endrin	ug/l	<0.0002	<0.0002
Lindane	ug/l	<0.004	<0.004
Methoxychor	ug/l	<0.100	<0.100
Toxaphene	ug/l	<0.005	<0.005
2,4-D	ug/l	<0.100	<0.100
2,4,5-TP/Silvex	ug/l	<0.010	<0.010
Radium	pCi/l	<1.00	<1.00
Gross Alpha	pCi/l	<2.00	<2.00
Gross Beta	pCi/l	<3.00	<3.00
Coliform Bact.	co/100ml	<1.00	<1.00
Chloride	mg/l	21.0	22.0
Iron	mg/l	0.770	1.00
Manganese	mg/l	0.220	0.190
Phenols	mg/l	<0.002	<0.002
Sodium	mg/l	14.0	18.0
Sulfate	mg/l	78.0	78.0

Time of Execution: 01/23/86 1059.4 est Thu





Romeo Tractor Plant  
Ground Water Monitoring Data  
Contamination Indicating Parameters  
Well: 3 Up Gradient

Date Sampled: 01-08-85 04-10-85 09-30-85

Parameter	Units			
Static	Feet	749.83	750.54	748.71
ph1		6.83	6.80	7.20
ph2		6.88	6.88	7.25
ph3		6.96	6.20	7.25
ph4		7.02	6.22	7.25
Number of Samples		4	4	4
Mean Value		6.92	6.13	7.24
Variance		7.09E-03	1.08E-02	6.25E-04
Standard Deviation		8.42E-02	1.04E-01	2.50E-02
Sp.Cond1	unhos/cm	665.	540.	650.
Sp.Cond2	unhos/cm	675.	550.	660.
Sp.Cond3	unhos/cm	680.	545.	660.
Sp.Cond4	unhos/cm	680.	550.	660.
Number of Samples		4	4	4
Mean Value		680.0	546.3	657.5
Variance		1.67E+01	2.29E+01	2.50E+01
Standard Deviation		4.08E+00	4.79E+00	5.00E+00
TOC1	mg/l	4.00	3.00	8.00
TOC2	mg/l	4.00	3.00	8.00
TOC3	mg/l	4.00	7.00	6.00
TOC4	mg/l	4.00	5.00	7.00
Number of Samples		4	4	4
Mean Value		4.00	4.50	7.25
Variance		0.00E+00	3.67E+00	9.17E-01
Standard Deviation		0.00E+00	1.91E+00	9.57E-01
TOX1	mg/l	0.050	0.165	0.140
TOX2	mg/l	0.050	0.175	0.120
TOX3	mg/l	0.070	0.105	0.140
TOX4	mg/l	0.080	0.110	0.130
Number of Samples		4	4	4
Mean Value		0.063	0.139	0.133
Variance		2.25E-04	1.32E-03	9.17E-05
Standard Deviation		1.50E-02	3.64E-02	9.57E-03

Summary of Well Sampling Data

Parameter	Mean Value	Variance	Std. Deviation	Number of Samples
pH:	6.76	2.44E-01	4.94E-01	12
Sp.Cond:	627.9	3.75E+03	6.12E+01	12
TOC:	5.25	3.48E+00	1.86E+00	12
TOX:	8.111	1.75E-03	4.18E-02	12

Time of Execution: 01/23/86 1502.2 est Thu



Renee Tractor Plant  
Ground Water Monitoring Data  
Drinking Water and Water Quality Parameters  
Well: 4 Down Gradient

Date Sampled: 08-08-84 10-22-84  
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Parameter	Units		
Static	Feet	747.18	747.73
Arsenic	mg/l	<0.005	<0.005
Barium	mg/l	0.360	<0.100
Cadmium	mg/l	0.010	0.010
Chromium	mg/l	0.050	0.020
Fluoride	mg/l	1.00	0.200
Lead	mg/l	<0.050	<0.050
Mercury	mg/l	0.001	<0.0005
Nitrate	mg/l	0.120	<0.020
Selenium	mg/l	<0.005	<0.005
Silver	mg/l	<0.020	<0.020
Endrin	ug/l	<0.0002	<0.0002
Lindane	ug/l	<0.004	<0.004
Methoxychlor	ug/l	<0.100	<0.100
Toxaphene	ug/l	<0.005	<0.005
2,4-D	ug/l	<0.100	<0.100
2,4,5-TP/Silver	ug/l	<0.010	<0.010
Radium	pCi/l	<1.00	<1.00
Gross Alpha	pCi/l	<2.00	<2.00
Gross Beta	pCi/l	<3.00	4.00
Coliform Bact.	co/100ml	2.00	<1.00
Chloride	mg/l	16.0	16.0
Iron	mg/l	0.870	1.20
Manganese	mg/l	0.900	0.100
Phenols	mg/l	0.005	0.008
Sodium	mg/l	18.0	14.0
Sulfate	mg/l	64.0	73.0

Time of Execution: 01/23/86 1048.6 est Thu



Romeo Tractor Plant

Ground Water Monitoring Data

Contamination Indicating Parameters

Well: 4 Down Gradient

Date Sampled: 06-08-84 10-22-84

Parameter Units

Static Feet 747.18 747.73

pH1 7.25 7.50  
pH2 7.22 7.50  
pH3 7.26 7.60  
pH4 7.25 7.60  
Number of Samples 4 4  
Mean Value 7.25 7.55  
Variance 3.08E-04 3.33E-03  
Standard Deviation 1.73E-02 5.77E-02

Sp.Cond1 umhos/cm 710. 700.  
Sp.Cond2 umhos/cm 715. 705.  
Sp.Cond3 umhos/cm 715. 700.  
Sp.Cond4 umhos/cm 715. 700.  
Number of Samples 4 4  
Mean Value 713.8 701.3  
Variance 6.25E+00 6.25E+00  
Standard Deviation 2.50E+00 2.50E+00

TDC1 mg/l 3.00 5.00  
TDC2 mg/l 2.00 4.00  
TDC3 mg/l 2.00 3.00  
TDC4 mg/l 3.00 3.00  
Number of Samples 4 4  
Mean Value 2.50 3.75  
Variance 3.33E-01 9.17E-01  
Standard Deviation 5.77E-01 9.57E-01

TOX1 mg/l 0.165 0.160  
TOX2 mg/l 0.178 0.140  
TOX3 mg/l 0.165 0.150  
TOX4 mg/l 0.165 0.140  
Number of Samples 4 4  
Mean Value 0.166 0.148  
Variance 6.25E-06 9.17E-05  
Standard Deviation 2.50E-03 9.57E-03

Summary of Well Sampling Data

Parameter	Mean Value	Variance	Std. Deviation	Number of Samples
pH:	7.40	2.81E-02	1.68E-01	8
Sp.Cond:	707.5	5.00E+01	7.07E+00	8
TDC:	3.13	9.82E-01	9.91E-01	8
TOX:	0.157	1.42E-04	1.19E-02	8

Time of Execution: 01/23/86 1502.2 est Thu



Romeo Tractor Plant  
Ground Water Monitoring Data  
Drinking Water and Water Quality Parameters  
Well: 4 Down Gradient

Date Sampled: 01-08-85 04-10-85

Parameter	Units		
Static	Feet	748.87	749.33
Arsenic	mg/l	<0.005	<0.005
Barium	mg/l	0.200	<0.100
Cadmium	mg/l	<0.010	<0.010
Chromium	mg/l	<0.020	<0.020
Fluoride	mg/l	0.170	0.120
Lead	mg/l	<0.050	<0.050
Mercury	mg/l	<0.0005	<0.0005
Nitrate	mg/l	<0.020	<0.020
Selenium	mg/l	<0.005	<0.005
Silver	mg/l	<0.020	<0.020
Endrin	ug/l	<0.0002	<0.0002
Lindane	ug/l	<0.004	<0.004
Methoxychlor	ug/l	<0.100	<0.100
Toxaphene	ug/l	<0.005	<0.005
2,4-D	ug/l	<0.100	<0.100
2,4,5-TP/Silver	ug/l	<0.010	<0.010
Radium	pCi/l	<1.00	<1.00
Gross Alpha	pCi/l	<2.00	<2.00
Gross Beta	pCi/l	<3.00	<3.00
Coliform Bact.	co/100ml	<1.00	<1.00
Chloride	mg/l	16.0	15.0
Iron	mg/l	0.860	1.10
Manganese	mg/l	0.100	0.080
Phenols	mg/l	0.002	<0.002
Sodium	mg/l	14.0	21.0
Sulfate	mg/l	82.0	78.0

Time of Execution: 01/23/86 1059.4 est Thu





Romeo Tractor Plant  
Ground Water Monitoring Data  
Contamination Indicating Parameters

Well: 4 Down Gradient

Date Sampled: 01-08-85 04-10-85 09-30-85

Parameter Units

Static Feet 748.87 749.33 747.66

ph1 6.90 6.11 6.90  
ph2 6.97 6.11 6.90  
ph3 7.05 6.22 7.00  
ph4 7.10 6.31 7.10  
Number of Samples 4 4 4  
Mean Value 7.01 6.19 6.98  
Variance 7.77E-03 9.38E-03 9.17E-03  
Standard Deviation 8.81E-02 9.67E-02 9.57E-02

Sp.Cond1 unhos/cm 695. 555. 660.  
Sp.Cond2 unhos/cm 695. 570. 660.  
Sp.Cond3 unhos/cm 670. 570. 680.  
Sp.Cond4 unhos/cm 700. 570. 680.  
Number of Samples 4 4 4  
Mean Value 690.0 566.3 670.0  
Variance 1.83E+02 5.63E+01 1.33E+02  
Standard Deviation 1.35E+01 7.50E+00 1.15E+01

TOC1 mg/l 3.00 6.00 3.00  
TOC2 mg/l 3.00 6.00 3.00  
TOC3 mg/l 3.00 4.00 4.00  
TOC4 mg/l 3.00 3.00 3.00  
Number of Samples 4 4 4  
Mean Value 3.00 4.75 3.25  
Variance 0.00E+00 2.25E+00 2.50E-01  
Standard Deviation 0.00E+00 1.50E+00 5.00E-01

TOX1 mg/l 0.140 0.295 0.195  
TOX2 mg/l 0.120 0.295 0.200  
TOX3 mg/l 0.130 0.190 0.200  
TOX4 mg/l 0.110 0.305 0.200  
Number of Samples 4 4 4  
Mean Value 0.125 0.271 0.199  
Variance 1.67E-04 2.96E-03 6.25E-06  
Standard Deviation 1.29E-02 5.44E-02 2.50E-03

Summary of Well Sampling Data

Parameter	Mean Value	Variance	Std. Deviation	Number of Samples
ph:	6.72	1.63E-01	4.04E-01	12
Sp.Cond:	642.1	3.31E+03	5.75E+01	12
TOC:	3.67	1.33E+00	1.15E+00	12
TOX:	0.198	4.74E-03	6.89E-02	12

Time of Execution: 01/23/86 1502.2 est Thu



Romee Tractor Plant  
Ground Water Monitoring Data  
Drinking Water and Water Quality Parameters  
Well: 5 Down Gradient

Date Sampled: 08-08-84 10-22-84  
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Parameter	Units		
Static	Feet	747.47	748.01
Arsenic	mg/l	<0.005	<0.005
Barium	mg/l	0.280	<0.100
Cadmium	mg/l	<0.010	<0.010
Chromium	mg/l	0.040	0.020
Fluoride	mg/l	1.20	0.190
Lead	mg/l	<0.050	<0.050
Mercury	mg/l	0.0008	<0.0005
Nitrate	mg/l	0.120	<0.020
Selenium	mg/l	<0.005	<0.005
Silver	mg/l	<0.020	<0.020
Endrin	ug/l	<0.0002	<0.0002
Lindane	ug/l	<0.004	<0.004
Methoxychlor	ug/l	<0.100	<0.100
Toxaphene	ug/l	<0.005	<0.005
2,4-D	ug/l	<0.100	<0.100
2,4,5-TP/Silvex	ug/l	<0.010	<0.010
Radium	pCi/l	2.00	<1.00
Gross Alpha	pCi/l	<2.00	<2.00
Gross Beta	pCi/l	4.00	3.00
Coliform Bact.	co/100ml	<1.00	<1.00
Chloride	mg/l	20.0	18.0
Iron	mg/l	5.00	4.20
Manganese	mg/l	0.170	0.120
Phenols	mg/l	0.004	0.024
Sodium	mg/l	16.0	15.0
Sulfate	mg/l	58.0	73.0

Time of Execution: 01/23/86 1048.6 est Thu



## Romeo Tractor Plant

## Ground Water Monitoring Data

## Contamination Indicating Parameters

Well: 5 Down Gradient

Date Sampled: 08-06-84 10-22-84

Parameter Units

Parameter	Units	Value 1	Value 2
Static	Feet	747.48	748.01

ph1		7.26	7.60
ph2		7.27	7.60
ph3		7.25	7.60
ph4		7.24	7.60
Number of Samples		4	4
Mean Value		7.25	7.60
Variance		1.67E-04	0.00E+00
Standard Deviation		1.29E-02	0.00E+00

Sp.Cond1	unhos/cm	730.	715.
Sp.Cond2	unhos/cm	730.	710.
Sp.Cond3	unhos/cm	730.	710.
Sp.Cond4	unhos/cm	730.	710.
Number of Samples		4	4
Mean Value		730.0	711.3
Variance		0.00E+00	6.25E+00
Standard Deviation		0.00E+00	2.50E+00

TOC1	mg/l	2.00	6.00
TOC2	mg/l	2.00	5.00
TOC3	mg/l	2.00	5.00
TOC4	mg/l	2.00	4.00
Number of Samples		4	4
Mean Value		2.00	5.00
Variance		0.00E+00	6.67E-01
Standard Deviation		0.00E+00	0.81E-01

TOX1	mg/l	0.130	0.072
TOX2	mg/l	0.130	0.072
TOX3	mg/l	0.125	0.069
TOX4	mg/l	0.135	0.060
Number of Samples		4	4
Mean Value		0.130	0.068
Variance		1.67E-05	3.23E-05
Standard Deviation		4.08E-03	5.68E-03

## Summary of Well Sampling Data

Parameter	Mean Value	Variance	Std. Deviation	Number of Samples
pH:	7.43	3.41E-02	1.85E-01	8
Sp.Cond:	720.6	1.03E+02	1.02E+01	8
TOC:	3.50	2.86E+00	1.69E+00	8
TOX:	0.099	1.11E-03	3.33E-02	8

Time of Execution: 01/23/86 1502.2 est Thu